The Bradshawe Lecture
ON
PNEUMOTHORAX,

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MR. PRESIDENT,—By appointing me, Sir, to deliver this lecture, you have paid me an honour which I am proud to acknowledge; and although, for the moment, the feeling of honourable distinction is lost in one of responsibility, still the confidence which your judgment always inspires relieves some of the anxiety I feel lest my ability should not prove equal to the task you have imposed upon me.

I have chosen Pneumothorax as the subject of my lecture—a subject so large, however, that I cannot undertake to deal with the whole of it within the time placed at my disposal, and I intend to limit my remarks to those parts which present especial interest or which call for further elucidation.

Of the causes to which pneumothorax is due, phthisis is the chief. This is the primary lesion found in at least 90 per cent. of all cases. When from the remaining 10 per cent. are excluded those cases in which pneumothorax is the result of gangrene or acute inflammatory destruction of the lung, or the consequence of injury to the lung or walls of the thorax, the percentage of the other assigned causes becomes very small; 2 or 3 per cent., perhaps, will include them all. It would be unprofitable to spend time in considering most of these groups, and I wish to refer to only two: first, that in which pneumothorax has occurred in apparently healthy persons; and, secondly, that in which the pleural cavity has been laid open by injury.

Many cases have been recorded, especially in recent years, of pneumothorax in the apparently healthy; but, as in these recorded cases recovery seems always to have taken place, there has been no opportunity of proving or disproving conclusively the existence of a pulmonary lesion. The question is thus raised whether it is possible to rupture the healthy lung by any force which respiration can bring to bear upon it. To this question an affirmative answer must be given. The violent paroxysms of whooping-cough and the straining of parturition afford clinical evidence that the lung may be ruptured by expiratory efforts. The condition, however, which is commonly produced is not that of pneumothorax, but that of subcutaneous emphysema.

A careful experimental study of this subject has been made by Dr. Champneys upon the lungs of infants.[1] When the lung is over-distended and gives way, the air first makes its way beneath the pulmonary pleura, stripping it easily off for some distance from the surface of the lung. It then passes along the root of the lung to the mediastinum, and following thence the course of the cervical fascia it reaches the subcutaneous tissue of the neck, whence it may spread over the whole body. If the pleura give way, the place of rupture is to be found usually near the root of the lung; but although pneumothorax did now and then arise in this way, the usual result was that already described—namely, emphysema of the mediastinal tissue and of the neck. Sometimes by artificial respiration after tracheotomy the air has taken the reverse direction, and, tracking downwards from the tracheotomy incision along the deep cervical tissue, has reached the mediastinum, or even the subpleural tissue, and occasionally the pleura has been ruptured and pneumothorax produced.

These experimental observations are confirmed by clinical experience. Dr. Champneys records twenty-seven necropsies[2] after tracheotomy. Mediastinal emphysema was found in three, and in two of these pneumothorax was present. The pneumothorax in one of them was double, and the cause of death. In eighty-two necropsies[3] at the Children's Hospital mediastinal emphysema was found in five, but pneumothorax in none. Wilks and Moxon[4] mention two cases of pneumothorax after tracheotomy, and connect it with mediastinal emphysema. Dr. Angel Money,[5] examining twenty-eight similar cases with especial reference to this point, found mediastinal emphysema in no less than sixteen and pneumothorax in two, but in both of these the pneumothorax was associated with mediastinal emphysema. In most of these cases artificial respiration had been performed.

It seemed desirable, considering the delicate texture of the infantile lung, to repeat these observations upon the adult, and I did this, with the result of confirming in the main the conclusions at which Dr. Champneys had previously arrived. I noticed also in my experiments the same important and curious fact to which Dr. Champneys has referred—namely, the difficulty of obtaining bursting pressure by means of water, owing to the permeability of the lung to water while it is still air-tight. The lung seemed almost like a sponge, so that the water flowed from it with such readiness when distended that the pressure could not easily be maintained.

The pressures at which rupture took place varied much in different cases. In four cases it reached two and a half inches of mercury, in one two, and in another four; so that what Dr. Champneys found in infants is true also in adults—that the normal resistance of the lung is widely different in different persons. My own observations were made upon the lungs after removal from the body, and the bursting pressures thus obtained are no doubt much below those which would be required when the lungs are *in situ*. In the only case in which I was able to attempt this experiment upon the dead body, the air did not appear in the neck until a pressure of nearly eight inches of mercury was registered, and pneumothorax was subsequently found on both sides. This experiment agrees with the statement made by Hutchinson, that the cells of the lung can resist a pressure of from three to nine inches of mercury when expanded as in health.[6]

I append the actual notes made at the time of experiment, and I wish to acknowledge with thanks the assistance I have received from Mr. Willoughby in this work:—

1. Left lung; adult man about fifty. Septicæmia after osteo-myelitis of femur. Lower lobe good deal collapsed, especially on posterior and lower part; no consolidation, no old adhesions. Lung expanded readily in all parts, except where there was collapse. The pressure was raised to two and a half inches of mercury, and the lung then burst at the posterior and middle part of upper lobe, about two inches from root of lung. When rupture occurred the pleura was suddenly stripped off over a space about the size of a five-shilling piece, and then it gave way, the hole measuring about one-eighth of an inch. The tube was next tied into the bronchus of the lower lobe; as the pressure rose some of the collapsed portions expanded, but not all. The lung finally ruptured suddenly on the posterior border, where the lung lies at the side of the spinal column. Here the pleura was suddenly stripped off the lung for the whole length of the lobe (six inches), and this gave way with a rent about half an inch long. On opening the raised part of the pleura the lung was found to be ruptured in several places; for the most part the holes were minute, but in one, which corresponded with a small portion of collapse, the hole was nearly one-eighth of an inch in diameter.

2. Left lung; adult man about fifty. Lung good deal collapsed; small fibrous nodules felt through the pleura, scattered throughout the lung; an old fibroid cicatrix at the apex. The lung distended readily (even the collapsed portions), and resisted a pressure up to four inches of mercury. At this pressure it gave way in the posterior and middle portion of the upper lobe; the pleura stripped off for a space about the size of a shilling, and then burst by a small aperture. The tube was fixed in the lower lobe, and the pressure was now raised to nearly five inches of mercury before any considerable rupture occurred. This took place at the posterior border, close to the root of the lung, but the pleura did not strip off, as in the last case. Before this pressure was reached many small patches of interstitial emphysema developed all over the surface of the lobe, but none of them burst. On section a fibrous nodule was found in the apex, and small nodules (so-called "peri-bronchitis") scattered throughout both lobes.

[1] Med. Chir. Trans., vol. lxv.; and Artificial Respiration in Stillborn Children, 1887. [2] Loc cit. [3] Loc cit.

[4] Lect. on Path. Anat., 2nd ed., 1875, p. 308.

[5] Med.-Chir. Trans., vol. lxvii., p. 101.

[6] The causes of death in the cases from which the lungs are taken were not pulmonary, but in some the lungs had undergone a good deal of post-mortem change.

3. Right lung of a boy. The cannula was tied in the bronchus and the lung inflated; at a pressure of two and a half inches of mercury it burst. The air came out of minute apertures around the inferior bronchial vein and along the posterior and mediastinal borders; some air seemed to come from the vein itself. The inferior lobe burst first, but there was a large slit accidentally made in the upper lobe before the experiments began. Where the lung burst, except close to the root, the pleura was first raised. It was not stripped off in large pieces, but in pieces varying from a large pea downwards in size.

4. Left lung of male, aged about fifty-five. Died after gastrostomy for stricture of œsophagus. Upper lobe particularly emphysematous, lower lobe not so much so; otherwise healthy. Air was forced into the lower lobe only as the upper one was cut. At a pressure of two inches of mercury the pleura was suddenly slightly raised in two or three places near the vein, and air came up also through the vessels. The holes were very minute in the lung-substance, and the pleura raised was about the size of a pea in each place.

5. Left lung of male, aged sixty-six, who died after cancer; stomach emphysematous, but otherwise healthy. At a pressure of two and a half inches of mercury the pleura was suddenly raised up over an oval space, longest diameter two inches, shortest three quarters of an inch. The part raised was the part covering the lower lobe where it was opposite the upper (that is, between the two lobes), and near the root.

6. Left lung of male, aged about fifty, who died suddenly from bursting of aneurysm of aorta, situated where thoracic becomes abdominal aorta. The aneurysm burst into the right pleura. Air was forced in, and at a pressure of two and a half inches a part of the pleura, one inch and a half long and one inch wide, was suddenly raised from the lower lobe close to the root. At the same time air came up through both artery and vein. The hole in the lung itself could not be seen; the hole in the pleura, which was raised, was a quarter of an inch in diameter.

A pressure of eight or nine inches of mercury is far beyond anything that even an adult can produce by expiratory effort; and it is clear, therefore, that it can only be in cases where the normal resistance of the lung is greatly reduced that in the absence of any disease of the lung pneumothorax can be produced. The lung is, therefore, capable of resisting in most cases the highest pressure that the most violent expiratory efforts can bring to bear upon it, and the question may well arise whether in those cases in which the lung has given way the absence of a local lesion can be without hesitation assumed. However this may be, it is clear that when rupture of the lung occurs, the result is usually subpleural, mediastinal, and cervical emphysema, and only very rarely pneumothorax. This conclusion clinical observation abundantly confirms. Although every text-book speaks of emphysema among the complications of whooping-cough, pneumothorax is by most writers not even mentioned, and so far as parturition is concerned, Dr. Matthews Duncan allows me to state that, although emphysema is by no means uncommon, he has never yet seen a single case of pneumothorax produced during parturition.

If now we turn to the cases recorded in which pneumothorax has occurred in the apparently healthy, it is remarkable that in so many there is a complete absence of any history of forcible respiratory effort. In some the pneumothorax developed actually during sleep; in others when the patient was sitting still or walking quietly. In a few it occurred during effort, but in many of them the efforts could not for a moment be compared in violence to those of parturition or whooping-cough. It is therefore probable that in these cases the lungs were not really sound. This conclusion raises another question of importance. If the lungs were not sound, is it not remarkable that recovery should so often occur? In the first place, it is well known that lesions may exist in the lung which no skill in physical diagnosis may be able to detect, and that such a lesion is capable of producing pneumothorax the following case provides proof:—

A man, aged fifty-six, was admitted into St. Bartholomew's Hospital with some shortness of breath; and, on examination, he was found to have pneumothorax of the right side. He gradually sank and died; and, on the post-mortem examination, the only lesion in the lung to be found was a small cavity with caseous walls, the size of a hazel-nut, near the root of the lung. This had ruptured into the pleural cavity.

But it might be objected that pneumothorax due to the rupture of a phthisical cavity would hardly recover. Such an assumption is not warranted by clinical experience.

Martha L——, aged nineteen, was admitted into the Chest Hospital, Victoria Park, with phthisis of the right apex. About a fortnight later pneumothorax was discovered on that side. She had had an indefinite attack of sickness, to which no importance had been attached, a few days before I saw her. The signs of pneumothorax were characteristic. No fluid developed, but after a few days the air began slowly to disappear, and in about nine weeks had completely vanished. The lung had re-expanded, and the breathing was audible as before over the whole side. While the pneumothorax on the right side was getting well the mischief in the opposite lung was rapidly advancing, and the patient was sinking of consumption. She was removed from the hospital against advice, and I heard that she died a few days later. The signs of pneumothorax had completely disappeared for more than a fortnight before her departure from the hospital. In such a case there can be no reasonable doubt of the phthisical nature of the lesion, and yet recovery was complete.

In another case in which complete recovery without effusion took place,[7] I have repeatedly examined the chest with great care, and have always failed hitherto to obtain any definite signs of local lesion. The patient has, however, had three or four attacks of slight hæmoptysis, and I think the probabilities are in favour of a phthisical lesion. It is now four or five years since the patient had pneumothorax, and he continues in his usual health.

From these facts, therefore, that lesions may exist in the lung, which cannot be detected, and that recovery from pneumothorax may be complete even when the lesion is presumably phthisical, supported as it is by the experimental and clinical evidence already brought forward, we are led to the conclusion that in many, if not all, of the cases occurring in the apparently healthy, a lesion, which may even be of a phthisical nature, has really been the cause of the affection.

I turn now to the second class of cases to which I wish to refer—namely, to that in which the pleural cavity has been laid open by injury. The mechanism of pneumothorax in these cases is thus described: "The elastic pulmonary tissue is always to a certain extent on the stretch. It is always, so to speak, striving to pull asunder the pulmonary from the parietal pleura; but this it cannot do, because the air can have no access to the pleural cavity. When, however, the chest ceases to be air-tight, and air is introduced into the pleural chamber, the elasticity of the lungs pulls the pulmonary away from the parietal pleura, and the lungs collapse."[8] This quotation expresses concisely the physiological doctrine of the day. It is not, however, completely correct, for the chest may cease to be air-tight, and yet air may not enter the pleural cavity. If, however, air does penetrate between the layers of the pleura, the lungs collapse, as they are stated to do, by virtue of their own elasticity. Experiment upon animals, as well as observation of disease and injury in man, establish the truth of this latter statement; but there are not a few instances in which, in spite of the pleura being opened, collapse of the lung does not occur, and air does not therefore enter the pleural chamber. In considering the whole question, these instances must not be disregarded. There are two great classes of such cases: first, that in which the pleural cavity has been laid open by an external wound; secondly, that in which, without any external wound, a communication between the lung or some other air-containing viscus and the pleura has been made by an internal lesion.

In the first class of cases, where the side of the chest may have been laid open by a tear or cut, the lungs are sometimes seen torn and bleeding in the floor of the wound, but still in close apposition to the walls of the thorax. A very striking case of this kind is recorded in the St. Bartholomew's Hospital Reports for 1876.[9] A wood-turner, aged thirty-three, stabbed himself in the head, chest, and abdomen with a chisel. The wounds of the head and abdomen were not very severe, but the wound in the chest, situated on the left side between the fifth and sixth ribs, was three inches long. Through it the lung could be easily seen wounded and bleeding. This wound in the chest was closed with strapping and oiled lint. Two days later there was emphysema, but

[7] Clin. Soc. Trans., vol. xvii., p. 56. [8] Michael Foster, Phys.
[9] Surgical Appendix to the Statistical Tables.

this soon cleared up, and in four weeks the patient recovered completely without any further trouble.

The second class of case, in which, without any external wound of the thorax, the lung is torn and the pleural cavity opened, is still more interesting, as it is also much more frequent. Simple fracture of the ribs is one of the commonest of surgical injuries. Pneumothorax, however, in these cases is extremely rare, and yet it is clear that both layers of the pleura are torn across and the lung opened, from the fact that air has made its way into the subcutaneous tissue, producing surgical emphysema. It is hardly necessary to bring forward proof of such a well-known fact, but it may be useful to quote one case in point, the most remarkable I have myself met with. I made the post-mortem examination upon the body of a woman who had been crushed by a waggon. There was no external wound beyond bruising, but several ribs were fractured, and a considerable amount of subcutaneous emphysema developed. The lungs had been severely injured, it was evident, for the patient had expectorated a good deal of blood. At the necropsy several ribs were found fractured, and the lung extensively torn over an irregular area about two inches in diameter; but in spite of this the lung was everywhere in apposition with the chest walls, and there was a complete absence of pneumothorax. The pleural cavity was free from adhesions. The case puzzled me much, and, having at the time no better explanation to offer, I assumed that the lungs must have become hitched over the protruding and jagged ends of the bones, and have been in this way prevented from collapsing.

Without bringing further evidence forward, I am expressing, I believe, only the common experience when I say that with simple fracture of the ribs pneumothorax is very rare, and surgical emphysema very common. This is a great difficulty, and various solutions have been proposed. It has been asserted that in such cases the pleural cavity has either been completely obliterated by previous disease, or that adhesions rapidly formed round the wound have sealed the pleural cavity. This theory is *a priori* improbable. It has no clinical facts to support it, and it is disproved by post-mortem examination. It is by others asserted that air does enter the pleura, but that it is rapidly absorbed again, so that its absence after death is accounted for. When so careful a clinical observer as the late Dr. Hilton Fagge[10] endorses this view, the need of reconsideration of the whole question is evident. These explanations are unsupported by clinical observation, and are one and all disproved by post-mortem examination. The fact, therefore, that the pleural cavity may be laid open, and yet that collapse of the lung with consequent pneumothorax may not occur, must be accepted, and an explanation sought.

The normal elasticity of the lung was calculated by Donders[11] to be equivalent to seven millimetres of mercury. Michael Foster rates it somewhat lower—namely, at five millimetres.[12] Hutchinson agreed with the higher estimate, as the result of direct determination upon the lungs of two criminals immediately after death. If for the present purpose the higher estimate be accepted, it follows that when the lung does not contract after the pleura is opened it must be kept on the stretch by some force greater than seven millimetres of mercury; and there seems to be no place for such a force to exist, unless it be in the pleura itself; and if here, it is probably to be found in the cohesion between the two serous surfaces. A theory of this kind seemed to admit of easy investigation, and it was put to the test in the following manner.[13] Two discs made of mahogany were taken. They measured two inches (five cubic centimetres) in diameter, were smooth on the surface, and had a groove cut round the margin. Over these, pieces of stomach were tightly stretched, with the peritoneal surfaces outwards, care being taken to select pieces which would lie as smooth and even as possible. These two discs so covered moved very freely over one another; but when they were pulled straight asunder, considerable force was required to separate them. In order to estimate this force, one of the discs was connected with the arm of a balance, and while the other was fixed fast weights were placed in the scale-pan until the two were pulled apart. I found in some of my experiments that about 325 grammes were required. It was thought that the force which kept these discs together might have been atmospheric pressure, and in order to eliminate this two similar discs were taken, perforated in the centre by a hole a quarter of an inch in diameter. Corresponding with this hole in the lower disc, a cut half an inch long was made completely through the membrane. The retraction of the membrane converted this slit into an oval hole, and in this way, when the discs were placed in apposition, a free communication was provided between the air and the space between them. I found, however, that the same weight was still required—namely, 325 grammes—to separate them. A similar slit was made next in the upper disc and membrane as well, but this, too, made but a few grammes difference. The result of these observations is to prove that there is some force other than atmospheric pressure[14] by which these two smooth surfaces are held together, and, without using the term in too technical a sense, I may speak of it as cohesion.

The next point to be determined was this—Was this cohesion greater or less than the elasticity of the lungs? Accepting, for the sake of the calculation, the higher estimate made by Donders—namely, seven millimetres of mercury—it was found that a column of mercury of this height, with a circular base of five cubic centimetres in diameter, weighed 185·6 grammes.[15] The weight required to separate the discs was 325 grammes, so that there was an excess of about 140 grammes in favour of the force which kept the discs together. If this weight be reckoned out in terms of mercury, it is equivalent to 12·5 millimetres as opposed to seven millimetres, giving thus an excess of 5·5 millimetres.

Having thus roughly established the correctness of the theory, I endeavoured next so to modify the experiment as to imitate somewhat more closely the conditions which exist in nature. I took a bell-jar, the mouth of which was about three inches in diameter. The top was bored so as to provide for the insertion of a perforated cork, into which a glass tube could be fitted and communication made in this way between the external air and the interior of the jar. Over the mouth two pieces of stomach were stretched with the peritoneal surfaces in contact. By exhausting the air the membranes were made to bulge inwards; they remained, of course, in contact. A slit was now carefully cut through the outer membrane, forming an oval hole about half an inch long and a quarter of an inch wide. This hole provided for the access of air between the membranes, just as in the case of the discs. When the air was now exhausted, the two membranes still remained in contact as at first, and it was only after considerable bulging that they separated and air passed between them. A manometer was now connected with the interior of the jar, so that the pressure could be measured. By means of a special modification of the mercury manometer, the reading could be converted at once into its equivalent in inches of water.

7·0 millimetres of mercury = 3·8 inches of water.
12·5 " " = 6·8 " "

The jar was now exhausted until the negative pressure indicated was 3·8 inches of water. At this pressure, the equivalent of the elastic tension of the lung, the membranes remained in contact. The exhaustion was continued until a pressure of 6·8 inches of water was reached, but still the surfaces remained in contact. The pressure could even be slowly still further reduced to 10 or 12 inches of water before the surfaces separated and air passed between them. When the pressure was relieved they again passed into contact, often so completely that the original experiment could be repeated. More often, however, unless the membranes had been very carefully stretched, a few small bubbles of air remained, which had to be pressed out with the finger to make the contact perfect.

It is not to be wondered at that with the bell-jar experiments higher values were obtained for the force of cohesion than with the discs. It is clear that although I had discs of five centimetres in diameter covered with membrane the actual surface of contact was something less than this, and the results obtained were therefore below the real value. While this value was in all probability too low, I accepted for the purpose of comparison the highest estimate of the

[10] Med., vol. i., p. 938.
[11] Henle, in Pfeiffer's Zeitschr., vol. iii. 1853, p. 293.
[12] Cyc. Anat., vol. v., p. 1058.
[13] These experiments were described in a paper communicated to the Royal Society on May 23rd, 1887.

[14] Cohesion between two smooth glass plates is independent of atmospheric pressure. (Draper's Medical Physics.)
[15] A disc of five centimetres in diameter has an area of $5^2 \times 0{\cdot}7854 = 19{\cdot}635$ square centimetres. Seven millimetres of mercury upon the square centimetre $= 9{\cdot}45$ grammes. A pressure of seven millimetres of mercury upon a disc of five centimetres $= 19{\cdot}635 \times 9{\cdot}45 = 185{\cdot}6$ grammes.

elasticity of the lungs, so that on both accounts the difference arrived at was less than the real difference.

With the bell-jar experiment certain precautions are necessary. The two pieces of membrane must be such as will stretch uniformly. This makes the parietal pleura itself not a very suitable membrane for experiment. It is much thinner in the parts corresponding with the ribs than it is in the parts corresponding with the intercostal spaces. The thinner parts yield most on exhaustion of the jar, so that the surface is thrown into furrows, and the tension on bulging differs in consequence in different parts. This affects greatly the results. The stomach is more suitable; but even with this, care must be taken in the selection of the parts used, for when stretched the large bloodvessels act as bands, and if they be included folds are also produced.

The membranes also must be so stretched as to have as nearly as possible the same tension in each. If this be done the surfaces may remain in contact at much greater negative pressures; it may even be at 2 inches of mercury before separation is effected. This result was so much in excess of what I anticipated that I sought for some explanation of it. While the membranes were on the stretch, therefore, at this pressure, I gently raised the edges of the slit with a blunt probe, so as to admit a little air between the membranes here, and I found then that the two layers separated at once. I repeated the experiment at different pressures. As the pressure was reduced more and more, the ease with which air passed between the layers when the edges were raised became less and less, until when the pressure was below 12·5 millimetres of mercury—that is, below the pressure at which the force of cohesion had been estimated,—in spite of the edges being freely separated by the probe, the membranes did not separate, but directly the outer layer which had been lifted up was allowed to fall, it passed again into close contact with the other, and the air which had been admitted was forced out. This experiment appears to me to be conclusive.

The figures given above are actual numbers obtained in particular experiments. The numbers differ a good deal in different observations, their variations depending upon differences in the stretching of the membranes, and in the condition of their surfaces at the time of experiment. Without laying, therefore, any special stress upon the actual values obtained, these observations establish, I consider, the existence of a force between the pleural surfaces much in excess of the elasticity of the lungs, and sufficient therefore to maintain the lungs in apposition with the walls of the thorax, even when air has free access to the pleural cavity.

Pneumothorax can, therefore, be no longer regarded as a condition to which there is an inherent tendency in the healthy body, but, on the contrary, as a condition brought about by the forcible separation of the pleural surfaces, and in this respect exactly analogous to the distension of the subcutaneous tissue, which occurs in surgical emphysema; and, considering the frequency of subcutaneous emphysema and the rarity of pneumothorax in simple fracture of the ribs, to which reference has been made, it would seem to follow as a corollary that the force required to distend the subcutaneous tissue must be less than that required to separate the layers of the pleura. Pneumothorax, therefore, so far from being, as it is commonly regarded, a passive process, and inspiratory in origin, is really expiratory in its initial stage, and requires an active force to produce it; and surgical emphysema, so far from implying, as Fagge asserts, the necessary antecedence of pneumothorax, may in reality be a protection against it, the air making its way in the direction of least resistance, beneath the skin rather than between the pleural surfaces. It is evident, further, that where the pleura is laid freely open, so that the air passes away without hindrance or expiration, the liability to pneumothorax will be still furthur reduced, for the expiratory pressure requisite to overcome the cohesion of the pleural surfaces will be absent.

By means of the discs I have been able to investigate some of the conditions which modify the force of this cohesion. In the first place, the surfaces must be absolutely smooth, for any roughness prevents close contact. This is one of the reasons why stomach well stretched over the discs is more suitable than pleura, the mucous membrane forming a cushion into which any little unevenness will sink. I have frequently found that the same pieces of pleura which would not give good results when spread directly on the discs answered admirably as soon as they were stretched with a piece of stomach beneath them.

The surfaces in contact must be neither dry nor wet, but simply moist, as are the normal surfaces of the pleura. If dry, they will not cohere at all; if wet, the force of cohesion is greatly reduced. The cohesion is, however, not between the membrane and the surface of the fluid, for a disc floated on water, blood, or serum requires but little force to raise it out. What is essential appears to be an extremely fine film of fluid, a capillary film, if I may call it so, between the two surfaces. It may be that the cohesion varies with the nature of the fluid; but, so far as I have gone at present, I do not find, with my rough methods of investigation, any perceptible difference between serum, blood, or water. The ready abolition of this cohesion by the presence of even a small excess of fluid is important, for there will be, on this account, less resistance to the entrance of fluid than of air into the pleura. This force of cohesion has a general bearing in physiology, for it will exist wherever serous surfaces are in close contact; in the peritoneum therefore, and in the pericardium as well as in the pleura. In the peritoneum its tendency will be to keep the intestines partly distended, and in this way it will diminish resistance to the passage of its contents along the tube. It will be, perhaps, in the joints that one of the most interesting illustrations of its usefulness will be found, for it is compatible with the freest movement possible of the surfaces upon each other. It may, perhaps, prove to be one of the most important means by which the head of the femur is kept in the acetabulum, but it will come also into play even in the hinge-joints. Since the force appears to be directly proportional to the extent of surface of contact, it will continue to be the same so long as the extent of surface of contact does not vary, and in the hinge-joints, therefore, so long as this is the case, the same amount of force will be exerted, whatever be the position of the joint, to keep the ends of the bones in place. The effect of excess of fluid in diminishing or even abolishing this force is well illustrated by the looseness which develops in the joints when effusion takes place into them.

But to return to the pleura, with which we are now more especially concerned. The existence of this force of cohesion is sufficient to explain satisfactorily many of the clinical difficulties which present themselves, and which led me to institute these investigations.

Among the physical signs of pneumothorax, the chief interest centres in the variations of pleural pressure and their consequences. If the observations to which I have just referred be correct, it is clear that pneumothorax, in its initial stage, must be an active process. Some force will be required to overcome the normal cohesion between the two layers of pleura, and to separate them. This must be obtained by expiration, and pneumothorax, therefore, in its initial stage is an expiratory process, and not essentially different in its production from surgical emphysema. As soon, however, as separation has been effected the elasticity of the lung will come into play, and air will enter the pleura until its retractility is completely satisfied, and, according to the observations of Donders (*loc. cit.*), this will continue until the lung occupies, in its collapsed state, not more than one-eighth of its original volume. Air, therefore, may enter, or fluid collect in quantity enough to occupy the space thus left in the pleura, without the development of any increased intrapleural pressure.

In considering the pleural pressures in pneumothorax, a sharp distinction must be drawn between the pressure during inspiration and that during expiration. The expiratory pressure will, of course, be always positive. Only when there is a large patent opening, so that air can pass freely out, will the expiratory pressure approach to zero. It will, however, differ widely in different cases, depending upon the force of expiratory effort.

With the inspiratory pressure the case is quite different. Air will continue to enter through the opening into the pleura until the pressure within, in the position of the deepest inspiration, is equal to that of the atmosphere. When this point is reached no more air can enter; and if, as is usually the case, the opening be valvular, so that no air can escape, the pressure on inspiration will remain at zero. If the inspiratory pressure now rises, some other cause must be at work, and in most cases this is found in the development of effusion, either serum or pus; and a positive inspiratory pressure may therefore be taken as indicative of the presence of fluid. The converse, however, is not true; for fluid may be present in considerable quantity, as already stated, and yet the inspiratory pressure be not raised above zero. Under one condition only could the inspiratory pres-

sure rise above zero without fluid—namely, when, after the closure of the opening, the body temperature had been raised several degrees; but as such a rise in temperature is nearly always due to the development of fluid effusion, a difficulty is not likely to arise.

The next point of interest is the respiratory oscillation—that is, the difference between the pressures on inspiration and expiration—measured, of course, during ordinary quiet, not forced, respiration. This has been variously estimated in health. [By Donders at 1½ mm. of mercury, by Hutchinson at 3 mm., by Adamkiewicz from 3 mm. to 5 mm., by Hegel and Spehl at 3·6 mm. (quoted Heynsius, xxix., 265; Pflüger's *Archiv. f. Physiol.*).] The majority of observers value it at about 3 mm. of mercury, or about an inch and a half of water. This is found to be the respiratory oscillation in many cases of pneumothorax. It is, however, often in excess of this, especially when there is dyspnœa, the excess being due then chiefly to the rise of pressure on expiration.

There are two conditions under which the respiratory oscillation in pneumothorax is observed to be even less than normal. In the first the opening is widely patent, and air passes without any hindrance in and out of the pleura; in the other the opening is closed, and the inspiratory pressure is high. What is observed in this latter case is this: on first introducing the trocar, before air or fluid has been removed, the respiratory oscillation is small, perhaps not more than half an inch of water; but after relief of the tension, as the inspiratory pressure falls, the respiratory oscillation increases often much beyond the normal. The explanation of this is, I think, to be found in the effect produced by the high pressure upon the opposite lung. This lung, by the raised inspiratory pressure, has been partly collapsed, and the walls of the thorax have been allowed to expand, so that they are in the position of deep inspiration. The high expiratory pressure prevents the normal elastic recoil of the lung on that—that is, the unaffected—side. As soon, however, as the pressure is relieved, the elastic recoil comes once more into play, and the respiratory oscillation increases.

The following selected cases of pneumothorax with effusion illustrate the statements which I have just made:—

CASE 1.—Male, aged twenty-two. Hydro-pneumothorax. Recovery.

		In. of water.
First paracentesis	Inspiratory pressure	= + 6¼
	Expiratory „	= +13¼
	Respiratory oscillation	= 6½

The patient was an apparently healthy young man, of considerable muscular power. The high respiratory oscillation was due to dyspnœa, and depended chiefly upon the very high expiratory pressure. Forty ounces of serum removed.

		In. of water.
Second paracentesis	Inspiratory pressure	= + 6½
	Expiratory „	= + 8
	Respiratory oscillation	= 1½

The fall is observed chiefly in the expiratory pressure. Twenty ounces of serum were removed. From this time the patient rapidly improved, and left the hospital perfectly well. He has been frequently seen since, and he has been in active work for nearly three years. He appears in perfect health, and it is now almost impossible to say which was the side affected.

CASE 2.—Male, aged twenty-one. Hydro- (later pyo-) pneumothorax; death from rupture of an aneurysm of the pulmonary artery.

		In. of water.
First paracentesis	Inspiratory pressure	= + 1
	Expiratory „	= + 5
	Respiratory oscillation	= 4

Twenty-eight ounces of serum were removed.

		In. of water.
Second paracentesis	Inspiratory pressure	= + ¼
	Expiratory „	= + 2¼
	Respiratory oscillation	= 1¾

Thirty-six ounces of serum were removed.

Subsequently an abscess formed in the seat of puncture, which was found later to communicate with the pleura. A free incision became necessary. Some days after this the patient suffered from severe hæmoptysis, and blood passed from the incision as well. Death resulted from exhaustion consequent on the hæmorrhage, and on post-mortem examination a ruptured aneurysm of the pulmonary artery was found.

CASE 3.—Male, aged twenty-two. Hydro- (later pyo-) pneumothorax. Death. A large opening into the lung was found.

		In. of water.
First paracentesis	Inspiratory pressure	= + 3½
	Expiratory „	= + 8½
	Respiratory oscillation	= 4¾

Thirty-six ounces of serum were removed.

		In. of water.
Second paracentesis	Inspiratory pressure	= + 1
	Expiratory „	= + 6
	Respiratory oscillation	= 5

Hardly any fluid was obtained.

		In. of water.
Third paracentesis	Inspiratory pressure	= − ¼
	Expiratory „	= + ¼
	Respiratory oscillation	= ½

Fluid not reached.

Fourth paracentesis: Pressures the same.

Forty ounces of pus were removed.

The conditions were clearly entirely changed at the time of the last two paracenteses. The conclusion was drawn, from the small respiratory oscillation of a quarter of an inch only on each side of zero, that a large opening must have developed in the lung. The patient died shortly afterwards, and this was found to be the case.

CASE 4.—Male, aged twenty-four. Pneumothorax with sero-purulent fluid. Death.

Inspiratory pressure	= + 6¾	inches of water
Expiratory „	= + 8¼	„
Respiratory oscillation	= 1½	„

Thirty-four ounces of sero-purulent fluid were removed.

CASE 5.—Male, aged thirty. Pyo-pneumothorax. Death.

Inspiratory pressure	= + 1¼	inches of water
Expiratory „	= + 2½	„
Respiratory oscillation	= 1	„

Eighteen ounces of pus were removed.

Subsequently pus discharged itself at the seat of puncture, and an incision was made. The patient died shortly after.

CASE 6.—Male, aged forty-six. Hydro-pneumothorax.

		In. of water.
First paracentesis:	Maximum pressure	= +9

Seventy-four ounces of serum were removed.

		In. of water.
Second paracentesis	Pressure on ordin. insp.	= +1½
	„ deep „	= −1
	Expiratory pressure	= +4
	Respiratory oscillation	= 2½ or 4½

No fluid was obtained.

The variations in inspiratory pressure showed that the opening from the lung was closed to inspiration as well as to expiration. The patient left the hospital greatly improved. He returned, however, about two months later with a discharging empyema. The side had fallen in greatly, so that the ribs were close together, and signs of phthisis had developed at both apices.

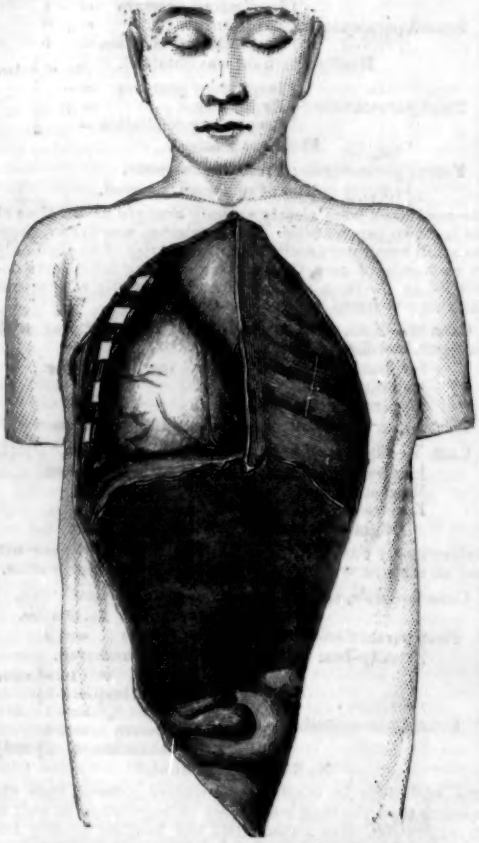
All the preceding cases confirm the statement made, that when the inspiratory pressure is positive the presence of fluid may be inferred. As already stated, however, the converse is not true—namely, that if the inspiratory pressure be not raised fluid is absent. The following case illustrates this fact:—

CASE 7.—Male, aged thirty-one. Pneumothorax with effusion. On paracentesis the inspiratory pressure was zero, but seventy-four ounces of serum were removed. After this the fluid was gradually absorbed, and the patient left the hospital feeling well, although the fluid had not quite disappeared.

Certain results follow from the alterations in pleural pressure just described, the most important and characteristic being, of course, the displacement of organs, especially of the heart. This displacement, it is known since Dr. Douglas Powell's experiments, is not due to pressure, but to the retractile power of the lungs themselves, and therefore is not necessarily associated with a rise in intrapleural pressure; but it is clear that when the pressure is positive the displacement will be increased.

The heart, when displaced, is not, as was once supposed, rotated, but simply drawn or pushed bodily over. I append a drawing, for which I am indebted to my friend Mr. E. O.

Bark of Birmingham, a former resident medical officer at the Chest Hospital, Victoria Park. In this it will be seen that the relation of parts is the same as when the heart is in its normal place; the only twisting or rotation which takes place—and it is but very little—is that necessitated by the curving of the ribs. The displacement is the same in kind, whether it be to the right or to the left side, and whether by air or by fluid.



E. M——, female, aged seventeen. Phthisis, left pneumothorax. The chest was opened by an incision down the middle line of the sternum, which was sawn through, and the costal cartilages on the right side having been divided, the front wall of the right pleural cavity was removed, leaving the left side unopened. At the upper angle of this opening was a large, rounded, tense tumour. This was the left pleural sac distended with gas and pushed considerably beyond the right border of the sternum, nearly reaching the end of the second rib. Directly below this was the pericardium, on opening which the heart was seen to be entirely on the right side of the chest, the apex being behind the right border of the sternum; the front of the heart consisting of the right ventricle, with a narrow border of left; scarcely any twisting on the axis, but the mediastinal structures, bronchi, and great vessels, all pushed over to the right side, the trachea passing nearly behind the right sterno-clavicular articulation. The right lung was only visible at the lower external angle of the opening, where the anterior border slightly overlapped the pericardium. On opening the left side of the chest a considerable gush of air took place, and the tumour of the left pleura became flaccid, but did not entirely recede behind the sternum; the heart returned more than an inch towards the left side. The left lung was adherent to the chest wall posteriorly down to the third rib; anteriorly and latterly the lung was free, except that the small tongue of the upper lobe, which lies ordinarily in front of the heart, had a firm band passing from its apex to the pericardium. There were two openings in the pulmonary pleura communicating with cavities in the lung. The pleural cavity contained a considerable quantity of pus, and the costal pleural was thickened, and covered in many places with pyogenic membrane.

In spite of the extreme displacement of the heart which occurs, cardiac murmurs due to displacement are, I believe, very rare. I have also been unable to satisfy myself of the actual existence of the sharp bending in the vena cava which the late Dr. Moxon described in displacement, and to which he referred some of the cases of sudden death in large pleuritic effusions. When the intra-pleural pressure is high, the veins running upon the inside of the thorax may be compressed, and the interference to the circulation through them will show itself by distension of the superficial veins of that side, and also by distension of the veins of the arm and neck. It might be supposed that when air or fluid are present together in the pleura, the air would probably be readily absorbed as the pressure arises. This, however, is by no means the case. I shall return to this point later.

One result attributed by many writers to great distension in pneumothorax my own observation does not confirm. It is stated that by the high pressure the percussion note may lose its tympanitic character, and become muffled or even dull. I have never been able to obtain the slightest evidence at the bedside to support this assertion, and a few experiments I have made go far, in my opinion, to disprove it.

The access of pneumothorax is usually sudden, and marked by characteristic severe symptoms, but in some cases these initial symptoms are slight, or even, it may be, entirely absent. These cases are described as latent pneumothorax. They are met with usually in the course of advanced phthisis, for to a bedridden patient it matters little whether a lung be useless on account of phthisis or because of the collapse which results from pneumothorax. Latent pneumothorax is, however, sometimes met with in phthisical patients who are not in bed, and even occasionally, though of course much more rarely, in the apparently healthy; that is to say, pneumothorax is sometimes discovered in these cases where there is nothing, or very little, in the clinical history to fix the date of its access. I know of no satisfactory explanation of the absence of initial symptoms in these cases, but I have myself met with it a few times.

The prognosis of pneumothorax is, of course, unfavourable. When it occurs in the ordinary course of phthisis, the mortality is very high. My own statistics show that about 90 per cent. of these cases die within the first month.[16] Weil's mortality-rate is lower—namely, about 50 per cent.[17] It is difficult to attach much statistical importance to small numbers, and the truth probably lies somewhere between these two extremes. Each case must, however, be judged upon its own merits. In any particular case the prognosis will be determined chiefly by the cause of the affection, and by its effect upon the patient, and next by the character of the effusion which may develop.

I wish, however, now only to speak of the cases in which recovery occurs. This may take place in one of two ways: either by the gradual conversion of the pneumothorax, through the development of fluid and the disappearance of the air, into a case of fluid effusion, which heals in the usual way; or by the simple disappearance of the air without the development of any fluid at all.

In the first group of cases the exudation is, of course, usually serous, but not invariably. In the case of a man, aged twenty-two, suffering from pneumothorax, on the first paracentesis pus was withdrawn. On the second paracentesis, about a fortnight later, the fluid was found to be sero-purulent, and finally it became serous. Recovery was ultimately complete.

The second class of case—namely, that in which recovery takes place without any effusion—is, of course, much less common, but still not altogether rare. I described, in the Clinical Society's Transactions, vol. xvii., p. 56, one such case, and I collected records of twenty-four other cases from literature, although the list did not pretend to be complete. Since that paper was written I have seen two or three other instances myself, and a few more have been reported, so that the number of recorded cases of this kind is now not very small, and as attention has been directed to them it is probable that this number will be soon further increased.

This rapid removal of air is familiar in experimentally produced pneumothorax. It is, in fact, I believe, difficult to maintain an artificial pneumothorax long in a healthy animal, because the air so quickly disappears. Fluid effusion may also in like manner be rapidly removed, and in both cases alike the lung may very rapidly re-expand. The common explanation given of the re-expansion of the lung after fluid effusion is not altogether satisfactory. The walls

[16] THE LANCET, May 3rd, 1884.
[17] Deutsch. Arch. f. Klin. Med., vol. xxix., p. 384.

of the chest fall in; adhesions, it is assumed, have formed across the pleural cavity, and as these contract the lung is pulled out so as to be again in contact with the parietes of the thorax. This may be the correct explanation, but it seems improbable, for adhesions are quite as likely to form over the lung and bind it down, and, in fact, the existence of adhesions in this position is often assumed to explain cases in which the lung has not expanded. This theory assumes, moreover, that the pleural cavity must, as a matter of course, after fluid effusion, be obliterated, and I do not think that this is always the case in the pleura any more than it is the necessary and invariable consequence of effusion into the joints. Whether this explanation be sufficient or not for the cases of long-standing pleuritic effusion, it is clearly inadequate to explain the cases of rapid absorption of fluid referred to. Cure by the formation and gradual contraction of adhesions is slow, and requires many weeks or months to complete itself, but in the cases we are now considering recovery is often accomplished in as many days.

What is the mechanism, then, by which the lungs in such cases are re-expanded? They collapse, it is known, by virtue of their own elasticity, with a force equivalent to about 7 millimetres of mercury. If they are to be re-expanded, some force is required for the purpose which shall be greater than this. When they are brought out so that the two layers of the pleura are in close contact, cohesion comes into play, as I have shown, to keep them out, but to get them so far a force greater than 7 millimetres of mercury will be necessary. Where is this force to be found?

The question, perhaps, is simpler in the case of fluid than it is in the case of air. The fluid may be removed in many ways: by absorption, by transudation, or by the pump-like action of the respiratory movements upon the lymphatics of the pleura. The existence of this last process as a factor in the removal of the fluid depends upon the demonstration of stomata in the parietal and visceral layers of the pleura. Recklinghausen first demonstrated stomata on the peritoneal surface of the diaphragm; Dybkowski in the costal pleura; and, although their real existence has been denied recently by Sappey, Klein, in his work on the "Lymphatics of the Lung," has no doubt of their existence, and thus describes the part they take in absorption: "It is quite clear," he says, "that the respiratory movement of the lungs is a factor that plays a most important part in the process—that is, of absorption by the lymphatics. When the lungs expand, as during inspiration, it will necessarily have the effect that the stomata of the surface are opened widely, and that the inter-muscular lymph spaces of the lung (of the guinea-pig), as well as the proper lymphatic vessels of the pulmonary pleura, become distended. Under these conditions the lymphatic system will become filled with material that happens to be in the pleural cavity, and that is able to pass through the stomata. During expiration, on the other hand, the stomata as well as the lymphatic spaces and proper lymphatic vessels will become compressed, so that their contents will be discharged into the efferent trunks." He further states elsewhere that the existence of stomata is actually demonstrated in inflammation by the bands of coagulated fibrin which are found plugging them. In the case of pathological effusions into the pleura this arrangement of the lymphatics cannot fail to be of the highest importance. It is often observed that a large effusion remains stationary for a long time when left alone, but that removal of a part of the effusion by paracentesis is followed by a rapid disappearance of the remainder. Paracentesis is followed, as I have shown above, by a return of the respiratory movements, which had been more or less impaired by the large effusion, and the consequence of this will be that the lymphatic pump will be restored to action. It is evident that in this process we have a power sufficient of itself to produce the force requisite for the re-expansion of the lung.

In considering the removal of fluid from the pleura, that peculiar property of the lung must not be forgotten of which mention has been made. I refer to the ready permeability of a still air-tight lung to fluid under pressure, so that it is possible that a part of the exudation may be actually squeezed through the lung as through a sponge, and, when it has reached the bronchi, may be got rid of partly by expectoration and partly by absorption. Perhaps this is an explanation of the so-called profuse watery bronchitic expectoration occasionally met with in large pleuritic effusions, and which is usually attributed to pulmonary congestion. I think this theory might be tested by chemical examination of the sputum, for such a transudation would probably be more richly albuminous than that of ordinary bronchitis. It is not likely, however, that this process can be of much importance in ordinary cases, on account of the frequent absence of any considerable pleural pressure, and because of the collapsed condition of the lung on the affected side. It may, however, play its part in relieving tension to some extent, and aiding in this way the lymphatic pump to get once more to work.

Lastly, we have to consider the removal of fluid by absorption, with especial reference to the consideration whether it may be capable of producing the force requisite for the re-expansion of the lung. I do not know of any experiments bearing directly upon this question—that is, the question of the force developed by absorption within the body. Exudation (which, I suppose, may fairly be regarded as the counterpart of absorption) may take place under considerable pressure, for proof of which we need not go beyond the pleura itself, as the pleural pressures in many cases of effusion demonstrate. We have only to imagine the process reversed, and more than the required force will be available.

It is possible that, so far as mere exudation goes, there may be no essential difference between dropsy and inflammation, and that in both the exudation may be due to obstruction, with this only difference, that in dropsy the obstruction has usually a more or less distant origin, and in inflammation a local cause in the inflamed part. If this be so, the cessation of inflammation will remove the obstruction, no more exudation will occur, and the effusion will be ready for absorption. If, as Draper assumes,[18] in opposition to the commonly accepted doctrine, the interchange of gases in the blood in the capillaries is sufficient—as I must confess it appears to me to be—to produce a current onwards in the blood, we may have in this a force of some magnitude to aid in absorption, a kind of capillary aspiration, if it may be so termed. At any rate, in the absence of direct experiment, we may, I suppose, assume that we may have the same force available in disease to remove pathological fluid from the pleura which, in health, is active to keep the pleura empty.

The removal of gas from the pleura is a still more complicated problem. The conditions we have to deal with are these two gas-holding cavities: first the lungs containing gas of a tolerably constant composition; secondly, the pleura containing gas which differs, in many respects, from that in the lungs;—these two cavities being separated by a complex membrane richly supplied with bloodvessels. We know that the gas is quickly and completely removed from the pleura, and under such conditions that, at the last, not less than 7 millimetres of negative mercury pressure is produced. The process by which the gases may be removed are these—diffusion, simple absorption, and absorption aided by chemical combination.

The percentage composition of the air in the vesicles of the lungs may be taken to be the following:[19] N=79·557; Co^2=4·380; O=16·033, and this probably remains fairly constant, the exchange between it and the atmospheric air in the larger tubes being provided for to a great extent by diffusion.

The air in the pleura varies in composition. If the air enters from without through a wound in the thoracic walls, it is of course to begin with simply atmospheric air. If the air enters through a perforation in the lung, it will have the composition of the air in the vesicles as given above. If the openings remain patent, the composition of the pleural gas may change but little; if, however, the openings be closed, changes in its composition at once take place, and these changes have been used to determine the question of the patency of the perforation. The earliest analysis of the gas in the pleura in pneumothorax was made by Dr. Davy,[20] who found that the O varied from 2·5 to 5·5, the Co^2 from 6·0 to 8·0, and the N from 88 to 90 per cent. More recent analyses[21] show that after remaining for some time in the pleura, the oxygen almost completely disappears, while the carbonic acid and nitrogen increase, the former very considerably. An analysis of Demarquay's[22] will illustrate this:—O = 0·49; Co^2 = 11·16; N = 88·35.

There are, so far as I know, no systematic analyses of the gases made during the stages of disappearance of a pneumothorax, so that the subsequent changes can be only a

[18] Medical Physics, 1885, p. 303.
[19] Michael Foster's Physiol., 1878, p. 305.
[20] Philosophical Transactions, 1830.
[21] Ewald, Reich. u. Dubois Reyn. Arch., 1878, p. 167.
[22] Gaz. Med., 1855, 496.

matter of inference. In the end, however, all the gas, whatever be its composition, is removed. It is evident, however, that diffusion simple is quite inadequate to explain even those changes which are known to occur; for although at a given time, owing to unequal rapidity of diffusion of the different gases, the relative composition of a mixture might be changed, diffusion could in the end only lead to uniform composition of the two exposed mixtures, and the gases in the pleura could not therefore by diffusion be made to disappear. Gréhaut[23] has further shown by experiment that, when the circulation is intact, little, if any, interchange of gases takes place through the pleura. If his observations be correct, it follows that, in the removal of gas from the pleura, we have to deal only with the same processes as are concerned in the exchange of gases in the lungs; and that what we have to consider is the action of circulating blood upon the gases contained in the pleura. In these processes, diffusion enters only so far as to provide for the passage of the gas into the blood-plasma, where the other processes —namely, absorption and chemical combination—come into play. The only difficulty here is that the blood is exposed on two sides to gases of different composition; and it might be supposed that, when the tension of gases in the pleura became less than that of the same gases in the vesicles of the lungs, no further removal of these gases from the pleura would occur.

Although the blood absorbs oxygen, carbonic acid, and nitrogen, still these gases were not all found to obey in the blood the laws which govern the absorption of gases in fluid, and it was inferred that the gases entered into loose chemical combination in the blood. This has been proved in the case of oxygen and carbonic acid, and is possible also, though to a much less degree, in the case of nitrogen.

The complete disappearance of oxygen from the pleura after pneumothorax is illustrated by two series of physiological observations. Analysis of the gases contained in the lungs after suffocation by obstruction of the trachea or bronchi shows that the oxygen is reduced to almost exactly the same amount as that in the analysis given of the air in pneumothorax — namely, about 0·4 per cent. Again, in experiments on respiration in a closed space, analysis shows a similar complete absorption of oxygen from the air of the chamber in which the animal is confined. There is, therefore, no difficulty in accounting for the complete disappearance of the oxygen from the pleura.

The carbonic acid, though partly absorbed, exists similarly in loose chemical combination both in the serum and in the cells of the blood; but there is this difficulty with carbonic acid, that while oxygen is naturally absorbed from the air in respiration, carbonic acid is naturally returned to it; and the analysis of the gas in pneumothorax seems to show that the carbonic acid does at first actually increase in amount, not only relatively to the nitrogen, but absolutely, so as to even reach 12 per cent., an amount considerably in excess of the carbonic acid tension in venous blood. These facts admit, however, of another and, I think, a more probable interpretation. If, as we suppose, the changes between the blood and the gas in the pleura are the same as those between the blood and the air in the lungs, there will be for every volume of oxygen absorbed an almost equal volume of carbonic acid discharged; so that in the end, when all the oxygen has disappeared, its place should have been taken entirely by carbonic acid. There ought, on this assumption, to be about twenty volumes of carbonic acid, the nitrogen remaining the same, but none of the analyses given show more than 12 per cent. The conclusion, therefore, may be drawn that the difference—namely, eight volumes—has been already absorbed. This interpretation has the advantage of removing the difficulty previously referred to, of the apparent increase at first of the carbonic acid.

A similar apparent accumulation of carbonic acid takes place, it is stated, in the vesicles of the lung, when the bronchus leading to them has become plugged, the lung in that part, on the absorption of the carbonic acid, becoming atelectatic. It is, however, in the end all removed. As experimental evidence of this is quoted the complete atelectasis which is produced by suspending a lung in water after it has been filled with carbonic acid.[24]

The nitrogen exists in the blood, it is believed, chiefly in simple solution, although the possibility of weak chemical combination cannot be absolutely excluded. The ease with which the nitrogen may be removed from the blood is demonstrated by the experiment of allowing an animal to breathe an innocuous gas containing oxygen, but free from nitrogen. Under these circumstances the whole nitrogen is discharged from the blood. According to Reynault and Rieset, there is naturally found in the expired air of health a slight excess of nitrogen; but it is also shown by other observers that under certain conditions nitrogen may be absorbed to some extent during respiration.

Now, although I do not know of any experiments which actually demonstrate the force which may be developed by the absorption and chemical combination of these gases in the blood, still it is extremely probable that in both of these processes there may be a far greater force developed than that which we require for the re-expansion of the lung. Into this problem the question of time hardly enters; for, if these processes be active at all, whatever influence time may have will be all in their favour. If, however, we may measure the force of interchange by its rapidity, it is clear that we must have great forces to deal with; for we find that in the twenty-four hours no less than 900 grammes of carbonic acid are excreted and 744 grammes of oxygen absorbed; and, in spite of this, there are contained in the entire blood of the body at any given time a total quantity of only 4 grammes of carbonic acid and oxygen combined.[25] Such a statement shows the extreme rapidity with which the exchange of gases is carried on; and we may, I think, fairly argue from the rapidity to the force of exchange.

The preceding speculations are necessarily somewhat crude; still the facts which have to be explained are well established—namely, the rapid disappearance of the air and fluid, and the consequent rapid re-expansion of the lung. Incomplete as is our present knowledge of the actual processes concerned, it is evident that in many of them there are sources of power sufficient to provide the force of which we are in search.

I wish that I could have spoken of the treatment to be adopted in the different forms of pneumothorax. There is much to be said upon this question. I must, however, leave this and many other interesting parts of the subject untouched, for the time at my disposal has reached its limit.

When I selected pneumothorax as the subject of this lecture, I did so because it had long been with me a favourite clinical study. I was aware that much had been already done, but I did not realise how much still remained for investigation. I can hardly hope that in this short lecture I have been able to throw much light on the many complicated questions which have arisen, but I shall be content if I have rendered more visible some of the shadows which still rest upon this field of knowledge.

[23] Gaz. Méd. de Paris, 1877, No. 49; 1878, Nos. 13 and 15.
[24] Landois and Stirling, Phys., p. 287.

NOTES UPON THE OPERATION FOR HARE-LIP.

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SURGEON TO ST. MARY'S AND THE CHILDREN'S HOSPITALS.

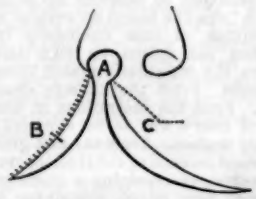
To obtain the most artistic result in the operation for hare-lip several practical matters demand attention; chief amongst them is this, that the line of operation be so planned that the cicatrix eventually prove as inconspicuous as it is possible for it to be. It should not descend straight from the nostril to the free border of the lip or it will be sure to invite attention, especially where it traverses the mucous border; and if the operation be done in the old-fashioned way the lower end of the linear scar is apt to be permanently indicated by a triangular notch in the free border of the lip. Then, the healing should be prompt, and the line of union thick and strong, and there should be eventually no white dots upon the surface marking the passage of hare-lip pins.

Supposing that the cleft extend into the right nostril, as in Fig. 1, the operation is begun by paring off the mucous membrane from the right side (but without removing any skin) through the whole thickness of the lip, and that not in the vertical direction only, but outwards almost to the angle of the mouth. (Arteries are best secured throughout the operation by forci-pressure forceps.) The mucous border of the lip on the left side of the cleft is to supply the lower

[25] Ibid., p. 281.

border of the right side of the lip; and for this purpose it does not suffice to bring a thin tail of mucous membrane across the cleft—a thick, bold, serviceable flap is needed. This is got by making an incision through the lip with a fine scalpel, from A to C; then, when the sides of the cleft are drawn together by the finger and thumb, the raw surfaces A B, A C are brought together in the vertical line, and are secured by four or five interrupted sutures of fine wire which pass deeply through the substance of the lip, whilst the full part of the labial flap is brought across beneath the vertical incision to form the prolabium. The rest of the flap, which is not merely mucous membrane, is brought to the right side of the lip, being trimmed and adjusted as circumstances demand. (Fig. 2.) Each case may need some special modification of procedure—"one must cut one's coat according to one's cloth,"—but the general plan of the operation as described above remains. There is an economy of tissue, for the mucous membrane on one side of the cleft only is

FIG. 1.

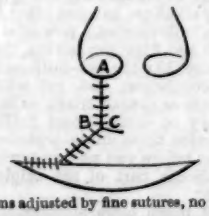


Single hare-lip; lines of incisions shown by dots.

wasted; that of the more promising side, with a good deal of the lip tissue, is brought down to form the border of the new lip. It may be that some weeks after the wound has soundly healed a finishing touch or two may be needed.

I have now altogether given up the use of hare-lip pins in the operation, and since doing so I have dealt with some of the very worse double clefts that I have ever seen, and to my entire satisfaction. The pins were originally used, no doubt, to keep the strain off the sutures, but the introduction of the improved waterproof strapping has rendered them entirely superfluous. A great disadvantage of the pins was that they were apt to leave the points where they passed through the skin marked by permanent and unsightly scars. To diminish the risk of this to the utmost I had been in the habit of withdrawing them at the end of twenty-four hours, but more recent experience shows that one can obtain better results by discarding them altogether. The sutures should be of fine silver wire passed deeply, and of

FIG. 2.



Lines of incisions adjusted by fine sutures, no pins being used.

horsehair which has been soaked in warm carbolic lotion; the latter answer particularly well for adjusting the mucous membrane. Sutures have also to be used freely and deeply along the dental surface of the vertical and oblique wounds; they should be arranged as carefully as are those upon the dermal surface. They complete the adjustment of the edges, they steady the tissues, and they prevent food and the tip of the tongue from getting into the wound. For applying them the lip must be thoroughly everted. On a few occasions I have met with a hare lip after operation in which the bond of union was only of the thickness of the skin; I apprehend that if this posterior set of sutures had been used the adhesion would have been through the whole thickness of the lip. I have never had my attention called to sores upon the tongue or gum from irritation caused by these sutures, and consequently I leave them to find their own way out; the sutures upon the front of the lip I begin to remove on the second day.

When the operation is finished I cover the lip with a scrap of absorbent wool, and, drawing the cheeks well together with the finger and thumb, I steady them by a piece of waterproof strapping, the wide ends of which reach nearly to the ears, whilst the middle part is narrowed in proportion to the depth of the lip.

It is to be noticed in Fig. 1 that the line of incision A C is prolonged for some distance upwards and outwards through the lip; unless this be done the border of the lip does not lie level, a slight kink being found in it. But on making this secondary incision the flap comes smoothly across.

SOME BACTERIOLOGICAL OBSERVATIONS IN CONNEXION WITH SUMMER DIARRHŒA.[1]

BY H. TOMKINS, M.D., B.SC., SAN. SCI. DIP.,
MEDICAL OFFICER OF HEALTH, LEICESTER.

THE mortality caused by summer diarrhœa is at first sight almost staggering to those who pay little heed to vital statistics. During the three months ending September, last year, no less than 15,900 deaths were attributed to diarrhœa in England alone; had but a quarter of this number been caused by any other disease, not only the professional but the public mind would have been startled thereby. Then why this comparative apathy that exists in regard to diarrhœa? The reasons are various. First, the very large proportion of these deaths occur amongst infants and young children; in some of our large towns a veritable slaughter of the innocents occurring annually in the summer months. Probably another reason is to be found in the fact that diarrhœa is not one disease, but is in many cases only a symptom or accompaniment of other ailments, and has not one common cause, but both in etiology and pathology presents much variety. Even its place in our nomenclature of classified diseases has been, and is, subject matter of dispute; for whilst generally it is agreed that it should be placed in the zymotic group, reasons have been adduced to show that it does not rightly belong here. One feature of much interest is the varying prevalence and fatality of this disease, in different towns, and in different parts of the country, and an inquiry directed especially to this point has been in progress under the direction of the Local Government Board for some years past, without, up to the present, yielding any satisfactory explanation of the same; and as yet no results have been published, though such men as Drs. Power, Ballard, Klein, and Cash have been engaged more or less in the work. As to the immediate cause or causes concerned in its production the ground is no more clear. Heat, dampness, improper food, artificial feeding, maternal neglect, wet subsoil, dense populations, peculiar geological or meteorological conditions, congenital debility, foul air, organic emanations, &c., have one and all been put forward as its cause or causes, and doubtless most of these play a certain part in its production, but very little consideration will serve to show that none of these alone afford us a solution of the problem. Of all these, the only one that exists constantly, and without which the disease in epidemic form is not met with, is a high temperature; and yet that heat alone is not the sole cause is seen on comparing different towns and districts where the temperature, as registered by the thermometer, is practically the same. For instance last summer, whilst in Wiltshire, Dorset, Hereford, Shropshire, Rutland, Westmoreland, and North Wales the death-rate was less than ½ per 1000, in Middlesex (extra metropolitan), Warwickshire, Leicestershire, and Yorkshire it was seven times as fatal. Or, taking the large towns, in Bristol the mortality was only 1 per 1000; in Huddersfield and Halifax only about 1·5, and in Derby 2·5; whilst in Salford and Preston it was nearly 5½ per 1000, in Leicester 6·23, and in Norwich 8·24. It cannot be supposed—and, indeed, is easily disproved—that the variations in feeding, or maternal care, or density of population in the above places are such as to cause a mortality nearly ten times as great in some of these towns as in others. Another fact which has been too much lost sight of in connexion with this subject is, that, although it is young children

[1] A paper read before the Manchester Medical Society.

who chiefly die, the disease is by no means confined to them, and I can show that for every case of diarrhœa occurring amongst children under five years of age there are probably four times as many above that age who suffer in the same way. In Leicester, out of 9700 patients, of whom particulars have been obtained, only 2400 were children under five years old. If we come to consider and examine more closely the prevalence of this disease in the various districts of a large town, after making due allowance for the influence exerted by all the above-mentioned supposed causes, we are led to the same conclusion as when comparing different towns with each other—i.e., that there appears to be some factor at work in some districts which is absent in others, and the theory that it is due to some form of germ life has been advanced with considerable plausibility. For even those who put forward as the cause such influences as over-crowding, foul atmosphere, organic emanations, and sewer air must admit that the deleterious effects of these things is not simply because the air is foul, or the emanations organic, or the air derived from sewers, but because each and all of these are laden with something, probably the germs of bacterial life, and to which germs the resulting ill-effects are most probably due. So wonderful and interesting are the discoveries made of late years respecting the connexion of disease with these low forms of life, and so captivating is the study of them, that, undoubtedly, we are in danger of going too far and pushing theories further than we are warranted by ascertained facts; it behoves us therefore to sift and weigh well all evidence or observations brought forward in support of a bacterial origin of any disease, and no one is more conscious of the incompleteness and points open to criticism in the few facts which I am about to notice than I am myself.

Leicester, the town to which I am medical officer of health, stands pre-eminent amongst English urban populations in two respects: first, it is the headquarters of the opponents of compulsory vaccination, the vaccination laws being to-day practically in abeyance there; and, secondly, it has for many years stood above all the other large towns for the prevalence of, and mortality from, summer diarrhœa, thus affording a large field for the observation of this disease. This unenviable notoriety has attracted the attention of the Local Government Board, who have sent experts to make special investigation into the subject. By local observers also much time has been expended and work done, with a view to ascertain what are the factors to which this excess of diarrhœa is due. But it would take up too much time to attempt to go through this work in detail. The late medical officer of health, indeed, after paying much attention to the subject, gave it as his opinion that the cause was to be found in the emanations from the sewers, which in the lower parts of Leicester are in a notoriously bad state, being flat, without fall, too small in size, most of them never free from deposit, and often liable to be overfilled and flow back into the cellars and low-lying parts of the town; but actual proof of this theory is not forthcoming. Leicester is situated in the valley of the Soar, with rising ground to the east and west. All the older part of the town lies in the hollow or flat district, whilst the newer parts (as the town has extended) are built on the rising hills on either side, these being at the highest point some 100 feet above the low-lying district. The soil (alluvial drift) in the flat part is variable in character, much of it being clay, whilst irregularly distributed patches of sand and gravel are also met with. It is in this lower, flat part of the town where diarrhœa is most prevalent; and finding that for years past it was in this area diarrhœa most prevailed, I thought it well to try to ascertain whether the air of this district would yield to experimental research any definite results, or different ones from those of the air in other parts; at the same time to examine the organs of the body in fatal cases for any corroborative evidence as to the cause of the disease.

By the employment of the methods of cultivation now in common use by bacteriologists, I believe I have arrived at a few certain definite results. And here I may remark that although during last summer more than 200 deaths have occurred, and notwithstanding that I have received the hearty co-operation of the medical men of the town, in only five instances have I been able to obtain a post-mortem examination within a sufficiently short time after death to be of any use for the purposes here required, for unless the examination of a body be made within at most six hours from death, any results obtained are quite unreliable. Of the chemical and pathological features of the disease I have nothing new to say, but it may be noticed, in passing, how very shrivelled and pinched in many cases is the expression after death from this disease, reminding one much of the faces seen in cholera. Another fact that arrested my attention, was the comparatively slight naked-eye pathological changes met with. The spleen, the kidneys, liver, &c., were apparently normal; in a few instances the mesenteric glands were somewhat enlarged, but by no means constantly so. The chief lesions were seen (as of course might be expected) along the mucous membrane of the intestinal canal; but very different were these to those met with in typhoid fever. The inflammatory changes extended more or less throughout the entire length of the intestinal canal, being most severe along the ileum. Small ulcers were in most instances present, but there was none of the localisation of these to Peyer's patches, as in enteric fever, nor was the cæcum found to be affected more than other parts of the canal.

The general results of the examination of the various organs, with a view to ascertain the presence or otherwise of micro-organisms may be summed up as follows. From the blood (taken from the heart) no results were obtained, with the exception of once doubtfully from the right ventricle. From the spleen no cultivations could be obtained. From the mesenteric glands three of the cases furnished growths. From the kidneys abundant growths were obtained. From the ulcerations in the coats of the intestines (as of course was to be expected) the growths were abundantly profuse. From the first growth of micro-organisms obtained successive cultivations were made, with a view, if possible, of obtaining a purer growth, as the original ones were very mixed, containing micrococci and bacilli of various forms and sizes, but the attempt was not very successful. The material chiefly used in the cultivations was nutrient gelatine, this being found best adapted for that purpose. The temperature at which the cultivations were carried on was about 20 C. (68° F.), and a difference was observable in the rate of growth between the three sources—that is, between the growths from the intestine, the glands and the kidneys. In those from the intestinal coats the growth was more rapid, so that within three days the whole of the gelatine had become used up and liquefied, and the liquid swarming with micro-organisms. In those from the kidneys and mesenteric glands the rate of growth was much slower, but the changes that could be seen taking place from the point of inoculation were the same in character, the mass slowly becoming fluid, until at the end of a week no difference was to be seen between these and the former. The resulting growths from the intestines, kidneys, and mesenteric glands respectively, examined microscopically, showed but little difference. The photographs shown give some idea of the organisms seen. The bacilli, when compared with those of Asiatic cholera, are shorter and thicker. The reaction of the gelatine in each case becomes markedly alkaline; and one other fact worth notice is that in all there is developed a powerful offensive odour, even to the fourth and fifth generation, the latter of which cannot contain more than the two-millionth part of 1,000,000 of the original inoculation, and yet with this immense dilution the odour is as characteristic as in the first growth. From this we may to some extent realise the enormous power of reproduction these micro-organisms possess, seeing that in these tubes before you now swarming with microbes only a many-millionth part of the original material can possibly be present.

But probably of much more significance than the foregoing are the results of the examination of the atmosphere. I have examined the air of the streets of the lower parts of the town, air from the sewers in the same district, and compared it with the air of the higher districts where the disease is comparatively absent, with the following results:—Examined on the same lines as before by means of cultivations in nutrient gelatine, the air in the streets of those parts of Leicester where the disease most prevails, and where the sewers are in the worst condition, as to cleanliness &c., the number of organisms per cubic metre, varied from 2000 to upwards of 5000 or 6000, the latter being obtained from air from sewer ventilators in the middle of the streets. Whilst in the air of the more open and higher districts they varied from 60 or 80 to 800 or 900 per cubic metre. The growth of these was slower than in those cultivations derived from the organs of the bodies, but with the air from the sewers the gelatine was ultimately liquefied in the same manner, and in these cultivations an odour was perceptible

of the same offensive chraracter, but much slighter in degree to that before mentioned.

Thus far all that has been shown is that in the organs of the body after death, and from the air, &c., certain microbes have been obtained, and that these have been artificially cultivated in nutrient media; but no direct evidence is forthcoming to show their connexion with the disease. I am, however, able to assert from actual experiment that a very small dose of these artificially cultivated microbes will produce a smart attack of diarrhœa; and although it is far from being proved that this diarrhœa is the result of some form of bacterial life, as the four essential conditions for any such proof are not yet forthcoming—i.e. (1) the presence of a distinct and specific organism in the blood or tissues of those suffering from the disease, (2) the artificial cultivation of these apart from the body, (3) the production of the disease by introducing these into a healthy body, &c., and (4) the presence of the same organism again in the body when such disease is introduced,—yet I would submit that one is justified in saying that there is evidence to connect these organisms with the prevalence of the disease; and although this slight contribution to a most obscure and difficult subject is little more than preliminary to the complete study of the etiology of summer diarrhœa, and is open to criticism at every point, I have thought it not out of place to bring together, as it were, to a focus what little in the intervals of other work I have had the opportunity of doing.

Town Hall, Leicester.

A CASE OF HYDROPHOBIA AND A CASE OF TETANUS.

BY H. HANDFORD, M.D., M.R.C.P.,
PHYSICIAN TO THE NOTTINGHAM GENERAL HOSPITAL.

W. P——, a powerfully built carter, aged thirty-two, was admitted under my care into the Nottingham General Hospital, at 8 A.M., on Feb. 3rd, 1887, said to be suffering from hydrophobia. He had been bitten by a stray dog four months and a quarter previously. No further information could be gained about the dog except that it was not known in the neighbourhood in which the patient lived. The wounds were on the back of the third and fourth fingers of the right hand; they were not cauterised. He treated them with domestic remedies, and they healed in a week or ten days. The scars were quite evident, and had not become painful or irritable. When I saw him a few hours after his admission and examined him, though I led him up to the subject several times, he markedly avoided any mention of his having been bitten, or of his difficulty in swallowing, until directly asked. There was a very evident unwillingness to talk or even think of the subject. This at the time seemed to me to point strongly in favour of the genuine nature of the disease, for at the outset there were many difficulties in the diagnosis of hydrophobia, which had been first made by the patient himself before coming to the hospital. He had been a soldier, had had "fever" in India, and had been very intemperate. His mother died insane, and a brother has "fits." There was some doubt whether the patient had been drinking for the previous fortnight, during which time his wife said he did not seem in his usual health, but he did not speak of the bite. The patient himself said that three days before his admission he began to feel ill and thought he had a "cold." He was sleepless, restless, dizzy, and had momentary losses of vision. He consulted a medical man, who prescribed for him. After he returned home, as he was washing, he screamed directly the water touched his face. Shortly afterwards he noticed some difficulty in swallowing. He then made the diagnosis of hydrophobia for himself, went again to his doctor (whom he had not previously told either of the bite or of his difficulty in swallowing), and he confirmed it. A few hours later he walked to the hospital and asked to be admitted. He complained of difficulty of swallowing, and of a feeling of constriction over the upper part of the sternum. His expression was very anxious, eyes rather wild and staring, and he spoke with an appearance of enforced calmness. The temperature was normal; pulse 56, and quite regular; *respiration 22, and markedly irregular*, being frequently interrupted by deep sighs. My attention was directed to the character of the respiration by my colleague, Mr. White, whose experience extends to six or seven cases, in all of which irregularity of respiration was very noticeable. There was no huskiness or alteration of the voice, and no frothing at the mouth or spitting till a few minutes before death. His tongue was fissured, soft, flabby, and coated in patches with a thin white fur. He complained of loss of appetite and thirst, and had taken very little food for three days. He vomited several times the day before his admission. His urine was rather concentrated, sp. gr. 1024, and contained no albumen. At 10 A.M., two hours after his admission, the case was taken by Dr. Williams, and much of the following is taken from his notes. The patient was quite rational and could give a clear account of his illness. He asked for something to drink almost as soon as he came in. He would not let the nurse hold the cup, but grasped it himself quietly and firmly and swallowed the water at one gulp. During this act he became much excited. He would not have more than a tablespoonful of water in the cup at a time. He said he had no difficulty in swallowing, all his difficulty being in getting the cup to his mouth. When he was about to be washed, as is usual, he became much excited, and said to the sister of the ward, "Don't bring water near me." He asked to be sponged instead, but said if he had to be washed he would do his best not to scream. The noise of pouring out water at this time did not affect him. When washed he shuddered and sighed like a person in a cold bath, and turned his head away from the water, but was otherwise unaffected till his face was to be washed, when he asked for the sponge and himself rubbed his face violently. In doing so he squeezed out a few drops of water, which trickled down his face and caused a slight convulsion. When I saw him at mid-day he was quite calm and rational. On my requesting to see him drink, he asked me to stand away, turned his head from the locker on which the cup stood, reached out his hand, seized the cup, *and brought it rapidly to his mouth with very irregular, jerking movements*, took a large mouthful and swallowed it with marked effort, accompanied by very slight facial spasm and some *general excitement*. The process of swallowing was much like that of a child taking disagreeable medicine. There was nothing that one could fairly call a convulsion at this time, but there was probably incoördination of the muscles of deglutition. At 8 P.M. I saw him again, and he said he felt much better. His temperature remained normal, his expression was less anxious, pupils widely dilated, pulse full, quiet, and regular. During the day he had taken about a teacupful of rice pudding without much difficulty, and had drunk about a pint and a half of milk. He was so much improved at this time that a medical friend who saw him with me, and who had previously seen several cases of hydrophobia, entertained much doubt as to the genuineness of the disease. The patient was ordered an enema of chloral and bromide of potassium. It was given at 8.30 P.M. without difficulty, and he went to sleep between 11 and 12 P.M. After some broken sleep he finally woke at 5 A.M. on Feb. 4th, and suddenly manifested marked delusions, and became furiously maniacal. He had illusions of sight, and wanted to go through the window. He was a very powerful man, and it was with great difficulty that he could be restrained in bed. There were intervals of comparative calm, during which he could be reasoned with, but without effect. He expressed a wish not to hurt anyone, but during his furious delirium made determined efforts to bite the hands of those restraining him. The excitement was greater than anything I have witnessed in delirium tremens or in mania. He was treated by the hypodermic injection of morphia. At this time the noise of pouring out water gave him a convulsion. He was perspiring profusely, and the act of wiping the face with a handkerchief caused a spasm, as also did the draught of air caused by moving a towel near him. He said he was hungry, and called for meat. Some bread-and-butter was given him. He masticated it, but could not swallow it. He took water from a spoon, but refused a cup; the act of swallowing caused great excitement, and also spasms of the muscles of deglutition, lasting on the whole nearly a minute. In the intervals, though appearing rational, his statements were incorrect. For instance, he said he had been bitten only five weeks ago, and on the knee. The day before he had given a correct account. Talking of the dog or of the bite agitated him greatly. Among other illusions he saw a dog under the bed. He made most heart-rending appeals to those restraining him in bed, and taunted them with gloating over his misery. His death took place somewhat suddenly, apparently from

failure of the heart, twenty-eight hours after his admission into the hospital, and on the third day (little more than forty-eight hours) after difficulty of swallowing was first noticed. Half an hour before death he could swallow milk, but sputtered out some of it. From this time he was frothing at the mouth, hawking up and spitting saliva. Twenty minutes after death rigor mortis had commenced, and the temperature in the rectum was 108·8°. There had been but little spasm of the trunk or limbs during life, though much voluntary effort. No priapism or sexual excitement was detected.

The body was examined three hours after death. Rigor mortis was strongly marked, and post-mortem lividity of the dependent parts of the body was distinct. The spinal cord was removed first. The blood was dark and remarkably fluid. Nearly two pints of blood escaped during the removal of the cord. The brain was next removed. There was a moderate amount of subarachnoid effusion and congestion of the small vessels in the pia mater. The cortical grey matter of the brain and the adjacent white substance for about one-third of an inch had an evident pink flush, due to capillary congestion. There were no hæmorrhages visible to the naked eye. The larynx was examined, and the interior (especially the false cords) was dusky and much congested. The heart was dilated, but empty. The other organs appeared healthy. Parts of the medulla and of the cervical cord were at once placed in powdered boric acid and forwarded to the Brown Institute, and I hear, through the kindness of Mr. Victor Horsley, that rabbits inoculated with them died of typical rabies. Other parts were carefully hardened in bichromate of ammonia solution, but sections showed nothing beyond an unusual fulness of the vessels, many of which were thrombosed, but this was probably a post-mortem effect. No cellular infiltration or unusual number of leucocytes could be found, either in the medulla near the origin of the vagus nor in the cervical cord, though carefully looked for. In two cases of rabies in the dog sections of the medulla and cord were examined, but nothing beyond marked fulness and dilatation of the vessels could be found. There was no cellular infiltration or distinct evidence of an inflammatory condition. The disease is apparently too little localised and too rapid in its progress for coarse tissue changes to be found.

In this case difficulty of swallowing was not a particularly prominent symptom, neither would changes in the medulla account for the furious maniacal excitement which with its sudden onset were the marked features of the case. During the early stage the symptoms were so slight, and their progress so little, that many considered the case one of nervous mimicry; while those who only saw him during the stage of delirium, taking into account the family history of insanity and the drinking habits of the patient, looked upon it as acute mania. The complete clinical picture, however, leaves no doubt, even if the inoculation experiments had not been performed. To sum up the special features of the case, the incubation period was long—four months and a quarter,—the early symptoms very slight and slow in progress, the outburst of delirium very sudden and its intensity unusually great, and the stage of excitement very short—seven hours.

As a contrast to the above, I may give a few details of the following case of tetanus which came under my care a few weeks later. It was at first supposed to be idiopathic tetanus—a disease of very doubtful existence—but a careful search resulted in the discovery of a wound. The history is as follows:—

On Monday, April 4th, J. W——, a labourer, aged twenty-eight years, noticed a sore on the sole of his foot, caused by a nail in his boot; the place had inflamed and "gathered," and was very painful. (On admission into the hospital this sore was completely healed, and not in any way painful.) On Tuesday he rested from work. On Wednesday he worked in the market all day. On Thursday morning he complained of his jaws feeling stiff. On Friday morning he walked a distance of two miles, and on reaching home burst into tears, saying he had fallen down four times. His jaws were now much more firmly closed, and he complained of great pain and a feeling of constriction round the lower part of the thorax, and of dizziness. He went to bed, and shortly after had an attack of opisthotonos. On Saturday his jaws were very firmly closed, and he was given twenty grains of chloral every two hours. In the evening the dose was increased to thirty grains. On Sunday he was much better. On Monday he was admitted into the hospital. He was very drowsy from the chloral, but when roused gave a clear account of his illness. He could open the mouth well, and during the day took three pints of milk without difficulty. The tonic spasm of the muscles closing the jaws had almost entirely passed off, neither was there any permanent arching of the back (from tonic spasm of the erector spinæ) or hardness of the abdomen. Possibly this was the effect of the large doses of chloral, which, however, had no effect upon the clonic spasms, which came on, without any apparent irritation from noise or draught, every two or three minutes. The spasm of the diaphragm, as evidenced by a sharp inspiration and pain at the epigastrium, was marked during each convulsion. The ease with which fluids could be taken without bringing on any spasm was remarkable. The patient was so drowsy on admission that the chloral was not resumed till evening, when he was ordered thirty grains every four hours, and he had the last dose at 5.45 A.M. on Tuesday. During the night he took only half a pint of beef-tea, as the difficulty of swallowing had increased. On Tuesday morning, at 6 A.M., it was not thought safe to give him any more chloral, as he was very drowsy; face inclining to be dusky; breathing noisy, 43 per minute; pulse 134 per minute; pupils contracted, but reacting to light. The general clonic spasms, which the previous evening had been from twenty to twenty-four in the hour, were still sixteen or eighteen—that is, coming on rather more frequently than once in four minutes. During the day he received nutrient and stimulant enemata, but the spasms continued at the rate of from four to fifteen in the hour, and he died at 7 P.M., the pulse failing some time before the respiration. Death took place on the sixth day after the commencement of the symptoms. An inspection of the body was made twelve hours afterwards. There was no undue fluidity of the blood, and no naked-eye change in any of the viscera. Portions of the spinal cord and of the posterior tibial nerve on the affected side were prepared for microscopic examination.

The points of interest are: the temporary improvement under the use of chloral; the cessation, to a very large extent, of the tonic spasm, and the facility in swallowing; the failure of the chloral, though pushed as far as was safe, to materially influence the general clonic convulsions, which remained severe till the last few hours of life; death from failure of the heart, rather than from spasm of the respiratory muscles during a convulsion, as is common.

A CASE OF HYSTERICAL SPASM SIMULATING TETANY.

BY F. FOORD CAIGER, M.D. LOND.

E. S——, a general servant, unmarried, was admitted into the Paddington Infirmary on Jan. 27th in a very prostrate condition. It was afterwards ascertained that she had always been delicate, but had had no serious illness until two years ago, when she was admitted into the Kensington Infirmary suffering from general weakness. Her teeth then became bad, and she had severe neuralgic pain in the face, and at the same time suffered from "cramps and fits." She stated that she then went out of her mind, and was removed to Leavesden Asylum, where she remained six weeks, and eventually went out to service. In her situation she was underfed, and at the same time was worked very hard. The catamenia have always been regular in time, but profuse. On the night of the 24th she was suddenly seized with cramps, beginning in the left hand and foot, extending up the limbs, and affecting the left side of the trunk, which gave her great pain. At the same time the left side of the face became rigid. This, in its severity, passed off in about half an hour, but continued more or less until she was brought to the infirmary three days later.

On admission the following notes were taken: Pale woman; very prostrate; surface cold; respiration hurried and shallow; complaining of painful cramp in the left arm, leg, and side. The fingers of the left hand are flexed, and adducted at the proximal joints and extended at the distal. The thumb is rigidly flexed into the palm, which is hollowed by contraction of the hypothenar muscles. The hand is thus bent into the form of a rigid cone. The wrist is partially flexed, and the forearm semiflexed and pronated, with some degree of rigid adduction of the shoulder joint. An analogous condition is present in the foot, the ankle

joint extended, and the leg straightened. The spasm likewise affects the muscles of the abdomen and the scapular group, the latter being very painful; and in the same manner the left pectoral and intercostal muscles. It is not obvious whether the diaphragm shares in the spasm. The left side of the face is rigidly fixed, and she is able to open her mouth but little, owing to contraction of the orbicularis oris and the muscles closing the jaw. There is partial but marked aphonia. All these spasms can be overcome by force slowly applied, but it gives her great pain. When the mouth is opened and she is told to protrude her tongue, it is done with difficulty, and it markedly deviates to the left. The left pupil is smaller than the right, but both react to light. There is blunted sensation over the whole of the left side of the body, including the tongue and conjunctivæ. Anæsthesia is complete in the foot, leg, hand, and forearm, but she complains of tingling in the finger tips. Patellar reflexes are natural and equal on the two sides. Subcutaneous œdema is present on the left side of the face, the extensor aspect of the left wrist and forearm, and the anterior tibial region of the same side. Temperature 99·2°; pulse 90; respiration 40, shallow and painful. Heart, lungs, and abdominal viscera natural. Bladder somewhat distended. Tongue coated. She complains of headache, shortness of breath, painful cramps, and inability to pass her urine.

On the following day it was noted that she had passed a restless night, but the muscular spasm had passed off, with the exception of that affecting the hand and foot, which still retained their characteristic form, and the spasm had persisted during sleep. She had passed urine, and was in comparative comfort, her respiration being quite unembarrassed. She was now able to open her mouth, and it was seen that all the teeth in the right upper jaw were carious, loose, and tender, with a painful spongy condition of the gums in their neighbourhood. The anæsthesia remained much the same. The left pupil was still smaller than the right, but the aphonia was only partial, and deglutition was less difficult. Temperature 99°; pulse 84.

For some days after this the patient's condition remained much the same. She was subject to paroxysmal aggravation of the spasms, recurring from four to six times in the twenty-four hours. In the intervals nothing beyond the contraction of the fingers, wrist, and foot was noticeable, and the continuance of the anæsthesia to a less degree. The paroxysms for the most part came on in the night, and some degree of spasm persisted during sleep.

On Jan. 30th I had the opportunity of witnessing the onset of one of these fits. It began suddenly, with a kind of snort. The hand, wrist, and foot then became more rigidly contracted, whence the tonic spasm quickly spread to the left side of the trunk, face, and neck. The left masseter was obviously contracted. Though quite conscious, she was unable to speak or move the left side of her body, and the breathing became stertorous and hampered through rigidity of the left side of the thorax. The pulse was accelerated; the pupils not dilated. After about fifteen minutes the attack passed off, and she returned to her usual condition. As soon as she was able to speak, she complained of great pain in the affected teeth. This pain, which was of a neuralgic character, spread all over the right side of her head. The scalp on the same side was very tender to the touch. She stated that these attacks were invariably preceded by aggravation of pain in the teeth and head. No effect was obtained by firm pressure applied to the ovarian region. The rigidity remaining constant in the hand and wrist, I tried the local application of chloroform, as recommended by Aran in Trousseau's Clinical Lectures. This was applied, sprinkled on a piece of lint, which was lightly bandaged round the wrist and forearm. In less than five minutes the spasm had completely relaxed, and for the first time since admission she was able to open her hand and move the fingers freely in all directions. The same plan, with like success, was tried with the foot, and at various times with different groups of muscles which were the seat of painful spasm, the result in each case being invariably the same. Muscular relaxation was also obtainable by plunging the hand and forearm into ice-cold water. This effect, however, was but transient. On no occasion could the spasm be reproduced by compression of the main bloodvessels of the limb.[1] The electric reactions were carefully tested. The result showed great diminution of electric irritability in the muscles of the affected side when tested with the constant current. The muscles of the right arm readily reacted to a current of ten Léclanché cells (KC), whereas twenty-six were necessary to obtain the faintest reaction on the left side. The qualitative reactions showed no abnormality. The cutaneous sensibility and muscular contractility to faradism were much diminished on the left side corresponding to the anæsthesia. It was only when the spasm was aggravated that it became painful, but at these times it caused her much distress.

On Feb. 4th, believing that her condition was in great measure referable to the painful and irritating state of her upper teeth, of which it seemed, as it were, the reflex expression, I caused her mouth to be thoroughly cleared of the offenders. Eight carious stumps in all were removed, including the central incisor on the right side, which was loose and intensely tender. At first the result seemed very satisfactory, for, with the exception of a slight attack shortly after the operation, she remained entirely free from spasm for three days, and the anæsthesia began to clear up in the extremities. The event, I am bound to confess, was very disappointing, for in ten days' time the spasms were as bad as ever. The aphonia, however, did not return. But from this time the nature of the affection underwent modification. The spasms began to show less marked resemblance to those of tetany, and the general features of the case became more distinctive of hysteria. The form of the hand became less typical, the fingers no longer taking the form of a cone with the thumb flexed across the palm. The wrist was often fixed in a state of extension, and the anæsthesia became more variable. Her mental condition, too, became less satisfactory; she evinced great irritability of temper, was emotional and disobedient, and took a morbid delight in annoying the other patients. At the same time she developed some transient delusions: saw faces looking at her through the window; imagined that the nurse had a spite against her, and declared that she saw the sister of the ward putting powders into the battery. Tenderness developed in the left ovarian region, and she had occasional auras. That her volitional control was much weakened was evinced both in her mental and physical actions. The power to overcome the contraction of one set of muscles was easily initiated by the application of the faradic current to the nerve supplying the opposing group, acting apparently as an adjuvant to her motor impulses. The spasms were always reduced by faradism, and this was used for a few minutes night and morning as a routine treatment, with the addition of a cold shower bath in the morning. By these means the frequency of the spasms was in great degree reduced and the anæsthesia lessened.

On the 25th the anæsthesia suddenly changed over to the right side and was complete, with the exception of the senses of sight and hearing. Occasional spasms occurred in the right arm and leg, and the symptoms became very variable. She became so troublesome and disobedient that on March 12th she was discharged from the infirmary.

Although from the beginning the hysterical element in the case was sufficiently obvious, yet certain of the symptoms were by no means characteristic of that complaint. I refer chiefly to the presence of fever, the distribution of the spasms, the marked affection of the muscles of the face and jaw, and the inequality of the pupils. On the other hand, the typical cone-shaped form taken by the hand and foot, the contraction of the wrist and ankle, which persisted in the intervals and during sleep, but were invariably reduced by the local application of chloroform or cold, their periodic and paroxysmal aggravation and diffusion, causing a condition of painful cramp, the rise of temperature, acceleration of pulse, and the presence of subcutaneous œdema in the parts most affected, bear a striking resemblance to those more severe forms of tetany so graphically described by Trousseau. A peculiar point was the unilateral distribution of the spasms. The connexion, too, with a diseased condition of teeth was interesting; and although the relief obtained by their extraction was but temporary, and therefore disappointing, yet the symptoms underwent modification from the

[1] I have since tried the local application of chloroform in this way in several cases of painful muscular spasm of varied origin, and in all with more or less success. In one of painful torticollis secondary to cervical caries the relief obtained was most marked. In another case of persistent spasm of the arm and leg of more than six months' standing, but whether of functional origin or due to organic lesion I am in doubt, probably the former, temporary remission of spasm lasting from half an hour to several hours could always be obtained by this means. I throw this out as a hint, as I think it, though obviously nothing new, worthy of more extended trial.

time of their removal, and did not again present the features so suggestive of tetany.

I regard this case as valuable, inasmuch as it tends to support the growing belief in the impossibility of drawing a hard-and-fast line between the so-called functional diseases of the nervous system. In this patient the neurotic diathesis was marked in every phase of her malady. Inheriting directly from her mother a legacy of nervous instability, what wonder that she should be prone to the development of nervous disorder, which found expression both in her psychical and physical processes. Whether the case be regarded as one purely distinctive of hysteria, or whether it be looked upon as one of hysteria in which a group of symptoms conforming to the type of tetany were superadded as a consequence of some other morbid process, is, I think, a matter of speculation.

Lindfield, Sussex.

TWO CASES OF CYSTITIS, WITH UNUSUAL COMPLICATIONS.

By GILBERT BARLING, B.S., F.R.C.S.,
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CASE 1.—A gentleman, aged twenty-seven, consulted me in January last for frequent and painful micturition, which had been troubling him for a few days. My first note of him, made January 8th, was: Micturition twelve times in the last twenty-four hours; necessity for immediate expulsion when the demand arose; pain in the perineum and at the end of the penis after micturition; temperature practically normal. Urine faintly alkaline, but not ammoniacal; sp. gr. 1018; a slight deposit of pus and mucus; *albumen nearly one-half of a column.* Microscopic examination showed pus and a few blood corpuscles, but *no casts*, after a most careful search. There was no œdema or headache, and except for the local trouble the patient felt little the matter with him. With complete rest in bed and milk diet he rapidly improved, and on Jan. 14th the micturition was less frequent and painful; the urine contained more pus, but no blood, and the albumen was only one-fourth of a column, and there were still no casts to be found. He then commenced to take small doses of copaiba.—Jan. 17th: The albumen was reduced to one-sixteenth of a column, and he was in all respects better.—18th: Aching pain in the right knee joint, which was rather hot and swollen.—20th: Right knee full of fluid; slightly painful; no inflammatory blush over it. Left ankle slightly swollen. No fever; no sweating. Pulse 76. Joints fixed on a McIntyre's splint and covered with evaporating lotion.—22nd: Urine almost free from pus; albumen one-eighth of a column. Micturition almost as in health. Joints much the same. Tongue furred. Anorexia. Pulse 80; temperature 99°.—25th: Right knee still very tense; left ankle better, but left knee distended with fluid, and similar to the condition of the right on Jan. 20th. No sweating or fever. Tongue very furred.—28th: Pus and albumen have disappeared from urine. Right knee and left ankle diminishing in size; left knee very tense.—31st: Phalangeal joint of left great toe red, swollen, and tender; other joints much better, and now treated with mild counter-irritation. Tongue still very furred.—Feb. 4th: All the joints better. Tongue cleaner. Desire for food returning.—20th: The swelling has disappeared from all the joints except the left ankle. The tongue is clean, and the urine healthy. Soon after this the patient went to the seaside, and resumed his business at the end of a month. There is no doubt that the attack was produced by exposure to the extreme cold at the end of December, 1886.

Case 2.—H——, a labourer, aged forty, was in the General Hospital under my care in September, 1885, suffering from cystitis. His trouble commenced six months previously, when he was under treatment in a cottage hospital for fracture of the femur. Owing to his recumbent position he had difficulty in micturating, which ended in retention ten days after his admission. The bladder was emptied once with the catheter, and soon after he noticed blood in his urine, which became thick, and later contained pieces of grit. The hæmaturia continued until he came to the General Hospital, when he also complained of frequent micturition, pain in the perineum, and especially of pain in the glans penis after micturition. On sounding, patches of calculous matter were detected, some of them appearing to be fixed on the surface of the bladder. Rectal examination revealed no thickening of the base of the bladder. The pathologist, Dr. Bull, reported on the urine as follows: "Colour yellowish-red; alkaline; ammoniacal: specific gravity 1015; *albumen half a column.* Microscopic examination: Triple phosphates, blood, pus, vesical epithelium, and a few doubtful granular casts." After a week's rest in bed, with careful emptying of bladder and washing out with boracic acid solution, the condition of the urine had improved somewhat, the albumen had diminished to one-third, and prolonged search failed to find any casts; but the patient was much worn by pain and broken rest, so I performed the "Boutonnière" on Sept. 29th, partly to evacuate the small concretions that the sound detected, and partly for the purpose of draining the bladder. A few grains of free calculous matter were removed, and some adherent patches were scraped off; but the most important condition found was a patch of ulceration about two inches in diameter on the trigone and its neighbourhood. The ulcer was of considerable depth, and surrounded by numerous warty elevations coated with calculous matter, suggesting to my mind that I had to deal with a malignant growth; I therefore removed some of the warty parts for further examination, and secured a drainage tube in the bladder. Microscopic examination of the warts showed nothing but granulation tissue in various stages of development. On Oct. 5th the tube was removed, as it was beginning to annoy the patient, who otherwise made an excellent recovery, interrupted only by an attack of epididymitis on the eighth day. On Oct. 22nd some urine passed by the urethra was examined; it was slightly ammoniacal, and contained a thick cloud of albumen, a little pus and blood, and some phosphatic crystals. A week later there were only a few pus-cells, and a trace of albumen in the urine, and the patient was discharged on Nov. 7th, reporting himself some weeks later as being perfectly well.

Remarks.—I have described these two cases together, as they had in common what is, I believe, a very unusual condition in cystitis uncomplicated with nephritis—viz., severe albuminuria, which I presume was dependent upon a large serous exudation from the bloodvessels of the mucous membrane of the bladder, and perhaps of the upper urinary tract, or, in the second case, from the ulcerated bladder surface. The joint complication in the first case did not closely resemble either urethral arthritis or acute rheumatism, being of a much milder type than is generally noticed in the former, and without the severe pain, sweating, and fever of the latter. The rapid and complete recovery after drainage in the second case was most satisfactory.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON THE LOCAL TREATMENT OF PSORIASIS.

By JOHN KENT SPENDER, M.D. LOND.,
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I IMAGINE that dermatologists are coming to the conclusion that the more circumscribed a skin disease is the more is it a purely local affair, requiring to be treated mainly with outside methods. If a person has, for instance, two or three dull-red mahogany-looking patches of psoriasis, now and then perhaps somewhat inflamed, but always so abrupt in margin that a pen or pencil line can be drawn round them, we should think first and almost solely of remedies applied to the visible disease, whatever may seem fitting to be done as internal confederates and helps.

Now, if there be any disease for which thermal bathing is almost always successful, it is the common *psoriasis diffusa* when treated with the Bath mineral waters. Adults and children come who are "white as snow and scaly as hoar frost"; and without taking any drugs (usually so called) they often leave Bath in less than six weeks (unless the disease be chronic and very defiant) with the skin physio-

logically sound and texturally pure. Nothing within the range of what is termed balneo-therapeutics is more trustworthy than this. A contrast to this generalised condition of things was lately seen in an Irish gentleman sent to me by Mr. Malcolm Morris, who had on the skin of the pubes a symmetrical dark-red patch, absolutely dry and very irritable. The patient left Bath without much benefit; the lenient influence of a hot alkaline water did not penetrate far enough to alter the deep pigmentation of the dermal structures, although the hypertrophy of superficial layers of cuticle seemed to be modified and "tamed down." Shortly after this Mr. Morris told me that he quickly cured his patient's malady by a combination of chrysophanic acid and lanoline.

One of the objects of this short paper is to give my experience of Auspitz's method, which consists in creating an artificial cuticle or film with certain substances dissolved in chloroform or gutta-percha.[1] This cuticle is made by dissolving one part of purified gutta-percha in ten parts of chloroform, which forms an excellent medium for fixing the application, as it adheres firmly and without alteration for several days. It is thin, chemically neutral, and does not cause tension or pain. Dr. Payne has further illustrated the subject in the last number but one of the St. Thomas's Hospital Reports. He proposes a solution of chrysarobin (20 grains) in a fluid ounce of liquor gutta-percha. This is to be painted with a brush on the affected places (from which the scales have been removed as much as possible by soft soap) once or twice a day, so as to form a perpetual film. The action is more rapid, and there is no staining of the clothes. The principle is capable of variation in detail, but Dr. Payne claims for the plan that it is specially neat and cleanly for the purposes of private practice. Chrysarobin thus applied, adds Dr. Payne, supersedes all other remedies. Perhaps this last assertion is too absolute, as there are not a few people who instinctively dislike any varnish which *seals up* the skin and shuts in the natural secretion of the smallest cutaneous area. Otherwise, I can heartily commend Dr. Payne's modification of Auspitz's method used within narrow limits. The principle has already been tested in the treatment of eczema. Under the protective guardianship of a gelatine enamel, irritation subsides, and a healthy epidermis is developed within a few days. Here everything depends upon the temporary exclusion of air, with all its impurities of dust and tribes of germs.

INJURY OF THE HEAD, IMMEDIATELY FOLLOWED BY SYMPTOMS OF COMPRESSION; TREPHINING; RECOVERY.

BY GEO. HERBERT WILLIAMS, M.R.C.S. ENG., L.R.C.P. EDIN.,
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ON May 3rd, 1887, about 10 P.M., I was called to see A. W——, a lad of nine, with the following history:—Two hours previously, the child had tripped at play and fallen on the left side of his head. He was, however, able to run home, where, complaining of pain, dimness of vision, and sickness, he was enjoined to lie down and rest.

On my arrival, two hours later, I found the patient lying on his back, and my attention was first directed to a contusion over the left temporal bone about the size of a Tangerine orange. No fracture could be felt at the seat of injury. The left side of the body was affected with clonic convulsions; the right hemiplegic; pupils widely dilated; conjunctivæ insensible to touch, and breathing stertorous. After a consultation it was decided at once to trephine over the seat of injury, as the only prospect of relief from imminent death. The coma was so profound that no anæsthetic was necessary. After carefully incising the periosteum, and turning it back, a circle of bone was removed, as near the seat of injury as possible, when a considerable amount of venous blood was immediately poured out. The finger was then introduced, and swept round the inside of the skull, but as no clot or spiculum of bone could be found, and the symptoms being still unrelieved, I nicked the dura mater, and incised it the length of the trephine wound, when the convulsions and hemiplegia almost simultaneously disappeared. The soft parts were then replaced, and the skin flaps brought together with a few points of suture, a drainage-tube being introduced, the length of the wound. The little patient was then removed to bed, and slept soundly for about four hours.

On my next visit—ten hours after the operation—I found him sitting up in bed calling lustily for breakfast. From this date the recovery was rapid and satisfactory. On the twentieth day the wound was quite healed, with a fair deposit of new bone, and the boy was out at play.

Remarks.—I must admit that, as there was no fracture or depression, I expected to find a clot on the dura mater, which, as already stated, was not the case, and yet one can scarcely think that the venous blood that followed the removal of the circle of bone was sufficient in itself to relieve the right hemiplegia. It is just possible the left convulsions may have been caused by *contrecoup*; but whatever the true pathology of this interesting case may be, I feel convinced in my own mind that the well-marked relief was brought about by incising the dura mater, and thus relieving the intra-cranial pressure.

Lockwood, Huddersfield.

[1] Annales de Dermatologie et de Syphilographie, vol. v., No. 1.

POISONING BY LABURNUM SEEDS.

BY SYDNEY H. A. STEPHENSON, M.B. EDIN.

ON March 23rd, 1887, a number of girls, who were convalescent from ophthalmia, went into their play-yard after their dinner at 12.30 P.M., where they picked up and ate some laburnum seeds. The seeds had been blown over into the yard from some neighbouring laburnum trees. The nurse in charge, on going into the yard at about 3 P.M., found a girl vomiting, and in the course of a few minutes five other girls commenced to vomit; they were all very white, complained of pain in their heads, and were shivering. The nurse could ascertain no cause for their sudden and simultaneous illness, which she thought might be due to something they had eaten at dinner, and which had disagreed with them. When I saw the children at 3.30 P.M. they had been put to bed; they all denied having eaten anything in the play-yard, and it was with some difficulty that I elicited the real facts from the eldest of them. Their individual states were as follows:—

CASE 1.—Age twelve years. Had eaten two seeds, and had vomited four times. This patient was lying flat on her back in bed, shivering violently; her face was shrunken and her lips were very white. She answered questions in a whisper, and with difficulty; said that she had pain in her head. Her pupils were equally dilated, acting both to light and to accommodation. Pulse feeble, 124 per minute; temperature in axilla 98°.

CASE 2.—Age nine years. Had eaten four seeds, and had vomited three times. General state similar to the first case. Pupils active and dilated. Pulse 132 per minute; temperature 97·4°.

CASE 3.—Age six years. Had eaten one seed, and had vomited once. Was pale and shivering. Pupils dilated. Pulse 100 per minute; temperature 97·6°.

CASE 4.—Age eight years. Had eaten three seeds, and had vomited twice. Complained of great pain in her head. Pupils dilated. Pulse 106 per minute; temperature 97°.

CASE 5.—Age four years. Had eaten one seed, and had vomited three times. Pupils dilated. Had headache. Pulse 120 per minute; temperature 97·4°.

CASE 6.—Age five years. Had eaten one seed, and had vomited five or six times. Very pale, and shivering a great deal. Pupils dilated. Pulse 136 per minute; temperature 97·2°.

Two other children had eaten some (two or three) seeds. Neither of them had vomited; but both were very pale, had dilated pupils, rapid pulses, and temperatures below 98°. Later in the day, at 5 P.M., about two hours and a half after the time the rest of the children are supposed to have eaten the seeds, two other girls commenced to vomit, complained of headache, and had dilated pupils and rapid pulses. In all the cases the vomited matters consisted of particles of food mixed with brownish-coloured mucus, which in the first case was slightly tinged with blood. At 8 o'clock in the evening the sixth case was covered from head to foot with an eruption of large red patches, much resembling scarlatina. This had quite disappeared by 10 A.M. on the following morning. All the patients were well on March 25th. The treatment adopted was to inject ether hypodermically, and then to give large draughts of tepid

salt water, which in every case produced copious emesis. At night the patients were given an ordinary purgative. The evidence as to the number of seeds they had each eaten rests upon their own statements, corroborated in most cases by two of the elder girls, who had given the seeds to the younger children.

I do not find many cases of poisoning on such a large scale by laburnum seeds recorded. Bonney, in THE LANCET for 1841, records that eleven boys were poisoned at Brentford by eating from one to five seeds apiece. One case had somewhat serious symptoms, but all recovered. The general mildness of the symptoms was attributed to the fact that they took the poison immediately after dinner. In 1856 twelve children were poisoned by the seeds at Otley, and all recovered. Dr. Hair, in the *British and Foreign Medico-Chirurgical Review* for 1869, gives particulars of a similar set of cases which occurred at Carlisle. Mr. Boyd Joll, in the *British Medical Journal* for 1879, records cases amongst an unspecified number of children, whose ages varied between six and fourteen years, and who all recovered. The symptoms in the cases I record were fairly uniform, and very similar to those given by the above-mentioned authors. All my ten cases had active dilated pupils, rapid pulses, headache, blanched features, and temperatures of 98° or below; and eight out of the ten had vomited without the help of emetics. No purging, abdominal pain, or tetanic convulsions occurred in any of the cases.

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DYSPNŒA AND ASTHMA.

BY BENJAMIN WALKER, L.R.C.P. ED.

THE clinical lecture on "Dyspnœa, especially on the Dyspnœa of Asthma and Bronchitis, and the effects of the Nitrites upon it," by Dr. Fraser, in THE LANCET of July 9th, is a most valuable contribution to the pathogeny of this symptom. He has logically and convincingly proved that it is due to spasm of the involuntary muscular fibres, "that stenosis of the bronchi due to spasmodic contraction of the bronchial muscles is a frequent cause of the dyspnœa of ordinary bronchitis." And "as nitrites lessen the contraction of non-striped muscle, it appears to follow that the râles which accompany the dyspnœa of asthma are produced by spasmodic contractions of the bronchial muscles, that the dyspnœa is mainly the result of spasmodic constriction of the bronchial tubes, and that therefore the old doctrine which attributes the asthmatic paroxysm to spasm of the bronchi is in all probability the correct doctrine."

For the last six years I have successfully treated the dyspnœa of asthma and bronchitis on the above theory of its causation, though not by the remedies of Dr. Fraser. The treatment by the nitrites advocated by him does not seem from the cases adduced to produce very stable and permanent results, though the symptom is momentarily relieved. Thus in the first case adduced complete relief was afforded after the inhalation of nitrite of amyl for a minute or two, but in five or six minutes "both the râles and dyspnœa were present in their original abundance and severity," and the same result followed two more applications of the same remedy. The two cases used as illustrations before the class were also at once relieved—one by the nitrite of amyl and the other by nitro-glycerine, but we are not informed whether there was a recurrence of the dyspnœa shortly after; and Dr. Fraser goes on to say that he has "not obtained any facts which would justify the preference of any one of the nitrites."

The object of this communication is to call attention to the action of hyoscyamine in this affection, and indeed in the treatment of spasm of involuntary muscular fibre, wherever existent—whether in the bronchi or hollow viscera (stomach, bowels, bladder). Given in the dose of half a milligramme ($\frac{1}{120}$ gr.), according to the urgency of the case, every half-hour or hour, until the spasm disappears, it is rare for the patient to be unrelieved after two or three doses; in cases of great urgency the first dose may be in the form of a hypodermic injection for quicker absorption. When relief is afforded, it may be given less frequently (two or three times a day), and gradually left off. I have never been disappointed with its action: it relieves the spasm promptly and efficiently, and the patient has no dread of an immediate recurrence of the dyspnœa. A young woman who is subject to occasional attacks of asthma came to me on June 7th and was quite relieved in twenty-four hours. She did not, however, continue the remedy at longer intervals for some days, as she should have done, and so had a recurrence three weeks later. She was, however, quite cured after four or five days' treatment, and has since remained well. Her previous attacks occurred in March, 1887, May, 1886, and December, 1885, when the same treatment was equally, and as quickly, successful; so that the intervals of immunity vary from three to ten months. I usually give with the hyoscyamine small doses of strychnine (the arseniate or sulphate), in half-milligramme doses, as a tonic, and to counteract the tendency to adynamy.

In spasm of the stomach or bowels, in dysentery, in strangulated hernia, and in retention of urine due to spasm of neck of bladder, hyoscyamine in small and frequent doses is invaluable, and will be the first remedy thought of by anyone who once gives it a trial in these affections. I would refer the reader to a paper on "Advanced Pharmacy" in THE LANCET of Dec. 10th, 1881, in which this method of treatment by the alkaloids in small and repeated doses is advocated in preference to the crude preparations of the Pharmacopœia.

Spondon, Derby.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prooemium.

CHARING-CROSS HOSPITAL.

A CASE OF ACUTE ULCERATIVE ENDOCARDITIS; DEATH IN EIGHT DAYS; NECROPSY; REMARKS.

(Under the care of Dr. JULIUS POLLOCK.)

THIS would appear to be one of those examples of malignant endocarditis in which no cause for the development of the disease can be found, there being an absence of history regarding those affections to which endocarditis is attributed. In 209 cases of this disease, collected by Dr. Osler,[1] no cause could be assigned in forty-five, and many of these were of a most malignant type. The primary disease was limited entirely to the aortic valves, and, although it was sufficiently extensive to produce most acute symptoms, there was no bruit or other evidence to permit of its localisation during life.

J. M——, a male, aged twenty-seven, was admitted under the care of Dr. Pollock on May 16th, 1887, complaining of excessive dyspnœa without any exertion, slight cough, but no expectoration. These symptoms had lasted about six weeks, but had lately increased in severity, and he sought admission to the hospital. There was no history of rheumatism or syphilis.

On admission, the patient was pale, and his skin had a yellowish tinge; eyes rather sunken; some working of the alæ nasi; cough, with slight expectoration of a darkish-coloured sputum. Lungs: No dulness on percussion; expansion not diminished; no râles; no bronchial breathing. Heart: No hypertrophy; percussion dulness normal; first sound at apex rough and reduplicated; aortic sounds normal. Urine: Sp. gr. 1020; no blood or albumen. Ordered fifteen grains of citrate of potash in an ounce of water every four hours.

May 17th.—Dyspnœa more marked, and expectoration more profuse. Temperature 99·4° at 10 A.M.; 103° at 6 P.M. Pulse 120; respiration 52.

19th.—Dyspnœa very great; sleepless. Temperature 98·4° at 10 A.M.; 101·8° at 10 P.M. Ordered ten minims of tincture of digitalis to each dose of the mixture, and four ounces of brandy.

21st.—Bowels much relaxed. Temperature 99° at 10 A.M.; 102° at 10 P.M. Pulse 124; respiration 52. Ordered ether and ammonia mixture, with ten minims of tincture of digitalis.

22nd.—Diarrhœa profuse. Temperature 97·6° at 10 A.M.; 103° at 6 P.M. Pulse 124; respiration 52. Dyspnœa extreme. Brandy increased to six ounces.

[1] THE LANCET, vol. i. 1885, p. 504.

23rd.—Weaker. Ordered two grains of sulphate of quinine every four hours. Brandy increased to eight ounces.

On the 24th he died.

Necropsy.—Heart: Excess of fluid in the pericardium; mitral valve normal. Attached to the ventricular surface of the anterior cusp of the aortic valve was a mass of coagulated fibrin, an inch in length and five-eighths of an inch in breadth at its widest part. On the adjoining surface of the next valve to the left was a clean-cut hole, about one-fifth of an inch in diameter, with slightly thickened edges. Before opening the aorta, the valves were tested and found to act efficiently. The remaining cusp of the aortic valve was thickened at its free edge, and had a superficial ulcer at its posterior part. The other organs were healthy, and no infarcts were found.

Remarks by Dr. POLLOCK.—This is a very acute case. Ulcerative endocarditis with pyæmic symptoms appears to have several phases. Sometimes it closely resembles typhoid fever, and is often accompanied by diarrhœa. In the present case the earlier phenomena were rather like those of pneumonia, but in a few days the nature of the disease became apparent. It is interesting to note that throughout there was no cardiac bruit, notwithstanding the diseased state of the aortic valve. The absence of bruit was no doubt due to the fact that the aortic valves were competent. There appears to be a sort of hurried and distressed action of the heart in these cases of acute ulcerative endocarditis, difficult to describe, but very suggestive, and which may be readily recognised.

WEST KENT GENERAL HOSPITAL.

STRICTURE OF ŒSOPHAGUS; GASTROSTOMY; DEATH FOUR MONTHS AFTER THE OPERATION; NECROPSY; REMARKS.

(Under the care of Dr. HOAR and Mr. KNOWLES.)

FOR the following notes we are indebted to Mr. George Wale, house surgeon.

James K——, aged sixty, attended as an out-patient on Sept. 15th, 1886, and complained of difficulty in swallowing. He said he had suffered for years from indigestion, flatulence, anorexia, occasional vomiting of food, and winter cough. He first noticed difficulty in swallowing solid food about two years previously. This gradually increased, and he could only swallow soft food and fluids.

The patient was a spare man, with an anxious expression. On examining his chest nothing abnormal was detected, but on auscultating over the cervical vertebræ during deglutition, the passage of fluid was heard delayed. There was no specific history; no history of traumatic origin; family history good. On passing a medium-sized œsophageal bougie, it was arrested at the cardiac end of the stomach, and felt to be gripped. He attended until Oct. 9th. The diagnosis was malignant disease of the œsophagus. Ordered five grains of iodide of potassium, fifteen minims of liquor morphiæ mur. in half an ounce of water, three times a day.

On Oct. 18th the man went to St. Thomas's Hospital, and was admitted. While there an œsophageal tube (size of No. 7 catheter) was passed, through which he says he was fed with a mixture of milk, beef-tea, and eggs, the tube being removed, cleaned, and reinserted every four days. He left, contrary to their advice, on Nov. 5th.

Nov. 6th.—Admitted into the West Kent Hospital wearing an œsophageal tube. Looks thinner (weight 7st. 13½ lb.). Frequent cough, with frothy expectoration; a good deal of wheezing over both lungs. Swallows fluids fairly well with tube in throat. Is fed through tube four times a day with milk, beef-tea, and eggs, strained through muslin.

16th.—As it was thought that the tube increased the bronchial irritation, and it was found necessary to change it more frequently than every fourth day owing to its becoming plugged with mucus, and as the difficulty of its reinsertion increased each time, and the patient was losing flesh (weight 7 st. 11 lb.), it was decided to perform gastrostomy. The incision was made, about three inches in length, in the usual position, the subperitoneal fascia exposed, and the peritoneum divided upon a director. A portion of the transverse colon which presented, was drawn down, and the stomach then brought into view. This was pinched up with the fingers and thumb of the left hand, and a small portion withdrawn through the wound and transfixed with two hare-lip pins, one supporting the portion transfixed at the upper angle of the wound and the other at the lower angle. One or two wire sutures were used to bring the ends of the incision into apposition, as it was too long, and the wound covered with protective and carbolised wool.

17th.—Pulse 100; temperature 101°. Tongue moist. Passed fairly good night. Is fed by enemata every four hours. Is still wearing œsophageal tube, although plugged. Swallows fluids more freely than before the operation, but the attempt to do so gives rise to dragging pain at the wound.

18th.—Some low delirium at night. Pulse 100; temperature 100°. Tongue moist. Cough troublesome. Fifteen minims of liquor morphiæ hyd. and twenty grains of bromide of potassium in half an ounce of water given three times daily.

19th.—Delirious at night. Plugged tube withdrawn and found to be kinked. Swallows fluids fairly well. Pulse 90; temperature 100°.

21st.—Pulse 88; temperature 99°. Tongue coated, moist. Wound looks well; adhesions formed all round. A tenotomy knife was passed into the stomach wall, and a small piece of drainage tubing inserted, the end being threaded and strapped to the abdominal wall. One hare-lip pin withdrawn.

23rd.—Pulse 94; temperature 99°. The other hare-lip pin withdrawn. Considerable oozing through and around tube. Drainage tube changed for a piece of green elastic catheter and plugged. Swallows with greater difficulty. Looks much thinner. A good deal of cough and bronchitic expectoration.

25th.—Some oozing still from wound. Stomach well united to abdominal wall, but a sulcus left between the two at the lower end of the incision. A small-sized indiarubber tracheotomy tube, plugged, and strapped to abdominal wall, used to replace the catheter after a three-ounce mixture of milk and beef-tea had been injected.

26th.—No oozing. Three ounces of food injected with syringe twice a day.

27th.—No oozing. Six ounces of food injected twice a day. Wound contracting; sulcus filling up with granulations. Some of enemas returned.

29th.—No oozing. Ten ounces of food injected three times a day. Can only swallow a few teaspoonfuls of hot fluid per diem. Was given some meat lozenges to relieve dryness of mouth. Cough less troublesome. Sibilant rhonchi and râles over both bases.

Dec. 4th.—Twelve ounces of food injected three times a day. Enemas stopped. Got up on to a couch.

9th.—Twelve ounces of food injected four times a day. Went out into the garden. Weight 7 st. 3 lb.

26th.—Weight 7 st. 11 lb. Cough troublesome, especially at night. He gets out every day, and can do light work (sweeping, &c.). The patient is taught to feed himself by means of an irrigator and long indiarubber tube. There is no oozing. The plugged tracheotomy tube is kept in position by a firm abdominal belt.

Jan. 12th, 1887.—Weight 7 st. 12½ lb.

Feb. 12th.—Weight 7 st. 10 lb.

March 4th.—Weight 7 st. 4 lb. Patient evidently losing ground; face looks more pinched; cough more constant; pulse weaker; marked emaciation.

15th.—Died, four months after the operation.

Necropsy.—Body very emaciated. The œsophagus and stomach were removed entire, with that portion of integument attached to margin of wound. The stricture was not at the cardiac orifice, its lower margin being an inch and a half above, and it extended upwards for two inches and a half. Its upper orifice was a mere chink, barely admitting a probe; its canal very sinuous, and some ulceration was present in its posterior wall. It was a well-marked scirrhous growth, and it involved the thoracic duct. There was some dilatation of the œsophagus above the stricture. The opening into the stomach was situated midway between the greater and lesser curvature, four inches from the pylorus, and three inches and a half from the cardiac orifices. The integument was firmly and evenly united to the stomach, the adhesions being above a quarter of an inch thick. Between the opening and the pylorus the stomach walls had undergone considerable hypertrophy. Lungs: There were a few pleuritic adhesions, and the base of the left lung was in a condition of red hepatisation. The other organs were normal.

Remarks by Mr. KNOWLES.—The method of fixing the stomach in this case—viz., by hare-lip pins—is that proposed and adopted by Mr. Bryce Barrow in a case operated on by

him at the West London Hospital. The advantages of this procedure are its easy application and its means of securely fixing the stomach, which in this instance was very desirable on account of the very troublesome cough. The amount of adhesion between the stomach and the abdominal parietes was ample and firm, as shown by the post-mortem examination.

WOLVERHAMPTON AND STAFFORDSHIRE INFIRMARY.

EPITHELIOMA OF PENIS AND SCROTUM, WITH ENLARGED INGUINAL GLANDS; COMPLETE REMOVAL OF EXTERNAL GENITALS, FOLLOWED BY RECOVERY AND AN APPARENT CURE.

(Under the care of Mr. VINCENT JACKSON.)

J. T——, aged fifty-one, single, was admitted in May, 1886. He had never had gonorrhœa or syphilis. There was no family history of cancer. Fourteen days ago he landed in Liverpool from America, and, having tramped to the Cannock Workhouse, was from there sent to the hospital. The man is tall, pale-faced, and a gardener by occupation. Two years since he noticed a small warty growth on the under surface of the penis. This gradually extended in all directions, until the whole of the penis and the greater part of the scrotum were involved. The discharge was free and most offensive in odour. Pain was not complained of. From childhood the prepuce has never been retracted. The chain of glands in each groin running parallel with Poupart's ligament is enlarged, but the glands are not tender, and are freely movable in all directions on pressure. The examination of the urine indicated no abnormality.

On June 3rd, ether having been given, Thiersch's operation was performed, the testes, as well as the penis and scrotum, being removed. Before the necessary dissection was commenced, the corpus spongiosum and urethra were exposed, divided across, and freed from their connexions as far back as was necessary, to permit the urethra to be stitched to the lower angle of the wound without the slightest traction. During the operation the bleeding was free, and required to be arrested by ligatures and forci-pressure forceps. The lateral portions of the scrotum which had been left were united along their edges by points of gut suture. The whole having been dusted over with iodoform, covered with cotton wool, and fixed by a binder, the patient was removed to bed.

In the after progress of the case there was nothing of importance to report; a portion of the flaps as well as of the deeper tissues sloughed, but the wound soon cleaned and the healing process was quickly concluded. As the enlarged inguinal glands were, if anything, a little smaller than when admitted, the patient was discharged in July without their removal. In May, 1887, the patient visited the hospital, and in appearance he seemed to be in perfect health. There was no return of the disease, and the enlarged inguinal glands had disappeared. The perineal urethral orifice was perfectly patent, the mucous membrane being slightly prolapsed.

Remarks by Mr. JACKSON.—This case is published as a contribution to the surgery of this particular operation, and as distinct evidence that it is not only curative but permanently so. No doubt cases are observed which possibly are considered, on account of the depth and extensive area of the malignant ulceration, to be beyond the reach of prudent surgery. The case reported was, I consider, approaching the border line of those cases which may be removed and those which no experienced surgeon would feel justified in jeopardising the life of his patient by attempting, not a forlorn hope, but a foregone conclusion. I have not witnessed a more extensive case of epitheliomatous ulceration of the male external genitals than the present one, and in attempting its entire removal I felt that the operation to be permanently successful must be as radical as it was possible to make it. The encircling incisions were made as wide of the disease as possible, and after the testes had been exposed, enucleated, and removed, the urethra was cut across, and, with the corpus spongiosum, was dissected back until pendent; it occupied the lower angle of the wound. In removing the body of the penis, and in separating by a process of tearing and scraping the crura from their bony attachments I was not prepared for the rather free hæmorrhage which had to be assuaged, as previous writers in reporting cases of Thiersch's operation had stated that the bleeding was slight and easily controlled. The recovery of the patient after this severe operation may be considered satisfactory, and the process of healing rapid. There cannot be the slightest question that the operation removed a most loathsome and destructive disease, and by so doing restored to activity, comfort, and a renewed life a man who would quickly have ended his days worn out by the consequences of so terrible an infliction.

Reviews and Notices of Books.

The Diseases of the Ear and their Treatment. By ARTHUR HARTMANN, M.D. Berlin. Translated from the Third German Edition, by JAMES ERSKINE, M.A., M.B. Glas. Edinburgh: Young J. Pentland. 1887.

Practitioner's Handbook of Diseases of the Ear and Naso-Pharynx. Third Edition of the Aural Surgery. By H. MACNAUGHTON JONES, M.D., M.Ch.

DR. HARTMANN'S work will be found very useful, containing just the kind of information that is requisite for the diagnosis and treatment of diseases of the ear. It does not profess to be a book for specialists. After a few pages which are devoted to a brief historical retrospect, the book may be said to commence with a description of the different methods of examination, and in this chapter the testing of the hearing by the tuning-fork is described in a more thorough and complete manner than we are accustomed to see in any of our English text-books. A short chapter is devoted to some special symptoms, and another to general therapeutics; and then at page 76, in a book of 250 pages, the diseases of the auricle and external meatus are described, the middle and internal ear following in their natural order. Each chapter opens with a brief anatomical description of the part involved in the diseases about to be described, which serves to refresh the memory of those who have not had recent opportunities of working at the subject. The account given of the various diseases and the treatment that should be adopted is, as a general rule, admirable, especially where local treatment is required. A little more stress might, we think, be laid upon the value of scraping out granulations and old caseous products from the middle ear with a sharp spoon under an anæsthetic. The author, on the other hand, advocates the use of a special metallic tube connected by rubber with a syringe. If the former be intelligently and skilfully performed, it is of great assistance to the latter operation, and should be accompanied by no greater risk than the forcible injection of fluids into the tympanic cavity. The old intra-tympanic injections through the Eustachian tube for chronic dry catarrh of the middle ear are still apparently recommended. We wish that the author had had the boldness to say at once how useless it is as a curative measure for this variety of deafness, where no secretion exists. There is very little said about cerebral abscess dependent upon disease of the ear; and absolutely nothing worth reading as to its treatment. At the present day we should expect to find in a book so good as this some expression of opinion as to when and under what circumstances the skull should be trephined; and the exact site of operation in different cases ought to have been discussed. The book, however, taken as a whole, appears to us to be the best in the English language for the class of readers for whom it is intended—namely, those who have not time to read such works as those of Politzer, Gruber, and Tröltsch. The translation, with the exception of a very few German sentences which have not received quite enough alteration in construction, leaves nothing to be desired.

The previous editions of Dr. Macnaughton Jones's book have been favourably noticed in THE LANCET, and the new one has been made more useful to its readers by the addition of a few coloured plates, taken from Dr. Jones's Aural Atlas,

of the more common diseases affecting the membrana tympani. Out of a book of 160 pages the first eighty are devoted to etiology, methods of examination, and general therapeutics. Much space is here given to the display of surgical instruments, which may be found in any surgical instrument maker's catalogue. At the same time it is only fair to say that the directions are good and to the point. At page 84 the reader finds that at last he may commence to study the diseases of the external ear, but through this and subsequent chapters he has constantly to refer back to much that has been previously said. This is troublesome, and in some instances unnecessary, but it is obviously difficult to avoid. Dr. Jones includes the diseases of the naso-pharynx in his book, and is thus able to describe one of the common causes of deafness in children—namely, adenoid vegetations. The clinical account of this condition which he gives is good, and would enable anyone to recognise a case of this kind if it came under his notice. But the operative means of relief is described in such a manner as to leave some doubt in the reader's mind which method the author recommends; and no inference can be drawn as to whether chloroform should be given for this most painful operation. It cannot be performed effectually in the same rapid manner in which the tonsils are removed, and we know that some difference of opinion exists in practice upon this point. Dr. Jones rightly condemns the use of chloroform for tonsillotomy, but he says nothing about anæsthetics in the case of adenoid growths. Granulations and caries of the tympanum do not, in our opinion, receive the attention they deserve, considering the importance of their treatment and prognosis; whilst perforation of the membrane, which might often be left alone, is treated with scarcely any reference to the granulations which so often exist in the tympanic cavity, and which may themselves be dependent on disease of the bone. The reader will find no help in the diagnosis of cerebral abscess in ear disease, nor any opinion as to the position most favourable for the trephine. On the other hand, the chapter on "Some Affections of the Internal Ear" is fully and ably written, and the book, taken as a whole, will be found a safe and useful guide to the busy practitioner in the more common diseases of the ear and naso-pharynx.

Agriculture in some of its Relations with Chemistry. By F. H. STORER, S.B., A.M., Professor of Agricultural Chemistry in Harvard University. Two volumes. London: Sampson Low and Co. 1887.

THIS seems to us the very book that was wanted by all interested in scientific agriculture. It is full without being diffuse, thoroughly scientific in tone and treatment without needless technicality, and so well written and arranged that it can be understood and used as a text-book by all who have acquired a sound elementary knowledge of chemistry and physics. The transcendent importance of agricultural chemistry was recognised from the time when chemistry became an exact science. Davy was among the first to help it, and from that time in England and abroad many an illustrious name has been associated with it. At the present day the study is more important than ever, for hard times have fallen upon our farmers, and it is only by accurate scientific knowledge joined to prudence and industry that they can hold their own. It would be impossible to enumerate even the most eminent of those who have worked in the field, but such names as Boussingault (so lately lost to us), Liebig, Stöckhardt, and Hellriegel on the Continent, and Lawes and Gilbert, Way, Voelcker, Church, and Warrington in England, can hardly be omitted. In connecting together, summarising, and applying to the needs of to-day the labours of these and countless other workers, Professor Storer has conferred a genuine service upon mankind.

The earlier chapters of the book deal with generalities, the relations of soil to air and water, the movement of water in the soil, the nutrition of plants, the selective power of soils, the influence of heat and light, the formation of soil from rock, the chemical changes produced by certain constituents of soil, and so on. There are, of course, some errors and omissions, but the whole history is well told, and suggestive as well as instructive. Here, and indeed throughout the book, we are reminded of the intimate connexion between agriculture and sanitation. The perfection of each would be reached if we could follow the well-known adage, "The rainfall to the river, the sewage to the soil." Among the physical conditions prominence is given to the capillarity of the soil, a most important agent in vegetable nutrition. Too fine division diminishes capillarity; much kneading and puddling is therefore bad, and earthworms are pronounced pernicious. It is strange that Darwin is not quoted on this last point, but there is no real discrepancy between the statement as it here stands and Darwin's great discoveries, for although the worm is a valuable agent in forming and disintegrating soils, he may, and no doubt often does, overdo his part.

A large portion of the book is, of course, devoted to manures: first, the pure fertilisers, such as phosphates, nitrates, and ammonia, and afterwards the more complex kinds—guano, stable dung, sewage, &c. As an example of the simple and practical character of the book, we may quote a few words on the subject of fish manure. After describing the different kinds of fish manure or "fish guano" made in America and elsewhere, and explaining the great value of all of them, the writer continues:—

"There can be no doubt that in the future, when the increase of population shall enforce a more intelligent agriculture, the drying of fish scrap will become a highly important branch of industry. It bears even now very curiously upon the question of utilising the sewage of cities. The reproach has often been made that the modern system of removing filth from cities by means of waterclosets and sewers flowing to the ocean is wasteful, unphilosophical, and wrong. But it appears from what has just been said, that such censure is hasty and ill-considered. So long as a clean, innocuous, and concentrated manure can be got from the sea in the shape of fish scrap, at less cost of money, comfort, labour, health, and life even than would have been expended in transporting the city filth to the farm, or in converting it into transportable form, it would be mere folly for the farmers to waste their energies upon the sewage."

This is substantially the argument of Sir J. B. Lawes, whose opinion should have been quoted. It has for the future, if not for the present, very great importance. Only one analysis of fish scrap is given, and we wish that others could have been added. Doubtless this and other deficiencies will be rectified in a second edition.

It does not lie in our province to discuss in detail the purely agricultural portion of the book, such as the rotation of crops, the management of farms under different conditions of soil, climate, and water, and the treatment of particular crops—barley, oats, and grass. It is curious, however, that a separate chapter is not given to wheat, and we should have been glad to have heard more of the management of root crops. The chapters devoted to pastures and the making of hay are valuable. It was of course impossible to include everything. The intelligent student of agriculture will be deeply grateful for what he has got, and if he masters the book he will have learnt much, and have attained the rudiments of a really scientific knowledge of his calling.

AT the annual meeting of the subscribers to the Royal Cornwall Infirmary, held at Truro on the 12th inst., an increase in the numbers of both in- and out-patients during the past year, as compared with previous years, was reported by the committee.

BRITISH MEDICAL ASSOCIATION.

FIFTY-FIFTH ANNUAL MEETING,

HELD IN DUBLIN, 1887.

PATHOLOGY.

(*Concluded from page 333.*)

AT the meeting on Thursday, Aug. 4th, Dr. Samuel Gordon, President, in the chair,

The PRESIDENT stated that he had no desire to inflict an address on the Section, but he wished to remind the few and inform the many that Pathological Societies originated in Dublin. In October, 1838, the Pathological Society of Dublin was founded, mainly through the efforts of Stokes and Robert Smith. The example was followed by Philadelphia and London. The President then traced the history and described the objects of the Society, and concluded by saying that its labours filled twelve large volumes, and the Society then merged in the new Academy of Medicine and Surgery.

Etiology of Chlorosis.

Dr. FOOT introduced this subject. He dissociated it from the comprehensive group of Anæmiæ, and touched upon the fundamental influence of age and sex, alluding to its relationship to precocity of menstruation. He invited a discussion as to whether it was due to a temporary disturbance of hæmatopoiesis or to arterial hypoplasia. After a few remarks by Dr. Anderson, the President called upon Professor Unna of Hamburg, to read his paper.

The Micro-organisms of Lepra.

Professor UNNA reviewed the opinions previously held on the pathology of leprosy. His remarks were then principally confined to the structure of the *bacillus lepræ* and the relation of the bacillus to the tissue elements. He had investigated very carefully the action of various staining reagents and different methods for colouring the bacillus. He described a modification of the method of Gram. By the action of the different dyes he was led to believe that the organism was not a bacillus, but that it consisted of a chain of cocci within a double sheath. When the bacilli were aggregated together, the outer capsules or glœa-masses fused together, and so gave the appearance of micro-organisms within the so-called leprosy cells. The leprosy cells, according to his view, were not animal but vegetable structures, and represented the fused capsules of the micro-organisms of leprosy. From these observations he regarded the term bacillus as untenable, and considered that the leprosy micro-organism should be called a *streptococcothrix*. Professor Unna then demonstrated a series of microscopical preparations.—Professor CROOKSHANK congratulated Professor Unna on his excellent paper, and on the fluency with which he had delivered it in English. His preparations also were very beautiful, but they did not convince him that the interpretation of them was on all points correct. He instanced the case of the bacillus of anthrax as one in which very peculiar appearances could be produced sometimes by the method of Gram. The iodine contracted the protoplasmic contents of the bacillus, and gave it a granular or beaded appearance. The beaded appearance of the tubercle bacillus was well known, and the leprosy bacillus was well known to be beaded also. But this appearance was very varied in the leprosy bacilli. In some cases there were three or four granules in a rod; in other cases there might be one only, which was sometimes situated terminally. In other rods, again, there might be two or three granules irregularly placed. On this account he thought it was misleading to speak of "cocci chains," and he preferred the old term *bacillus lepræ* to *streptococcothrix*.—Dr. THIN considered that the ovoid bodies seen in leprosy bacilli were spores. He had found the bacilli clustered in bodies with a rounded outline, which he considered cells. He had also found the bacilli in leucocytes in sections of the epiglottis, the leucocytes showing distinct nuclei. Dr. Beaven Rake, on examining juice from leprous nodules, found the bacilli within distinct cells. He considered the best results would be obtained from the examination of fresh specimens.—Dr. ACLAND said it was hardly fair to come to any definite conclusions from Professor Unna's specimens, as they had not been able to provide him with a sufficient number of high powers. But having examined the specimens, he was compelled to say that he did not hold the same views as the writer of the paper. He did not consider it a matter of great importance whether the organisms were in the cells or exterior to them. It was probable that they were found in both positions, but he was inclined to think that it was remarkable that the appearance of the organisms had been so variously described. Some looked upon them as an aggregation of cocci within a delicate membrane, others as bacilli, and that the appearance was due to the method of preparation. He agreed with Dr. Hansen of Bergen that the organisms were bacilli, and that in many cases they were within the cells.—Dr. SIMS WOODHEAD said that, after looking at Professor Unna's preparations, he thought that his views were not so untenable as they were regarded by previous speakers. He had found various bodies in fresh juices which closely resembled the appearances described by Professor Unna. He did not agree with a previous speaker that it was unimportant whether the organisms were found in the cells or in the lymph spaces, because if they attacked the cells it is probable that degenerations would occur much more rapidly than they do. He was inclined to support the views of the reader of the paper.—Professor UNNA replied.

A Report of fifty-eight specimens of Chronic Inflammatory Disease of the Uterine Appendages operated on by Mr. Lawson Tait during 1886.

Dr. J. ST. CLAIR BOYD gave a description of the pathological appearances of the organs removed. The great feature was occlusion of the infundibular extremity of the tube, and associated with this in the great bulk of them was closure of the uterine mouth. The nature of the contents of the tube seemed to be a matter of accident governed by the stage of the process at which the removal had taken place. The formation of tubo-ovarian cysts was now attracting considerable attention, and the specimens shown completely confirmed the views which Mr. Lawson Tait had already published.—Mr. TAYLOR spoke of the importance of determining what was meant by the term "tubo-ovarian cyst." He considered that there were at least three kinds which he defined, and there were possibly others.—Dr. JACOB and MR. LAWSON TAIT joined in the discussion.

Elephantiasis induced by Posture.

Dr. MAPOTHER described the case of a lady aged eighty, who had her knees and hips so flexed owing to rheumatic gout that lying on the back was unendurable. The legs thus constantly dependent developed a condition of elephantiasis. After describing in detail the condition which resulted, Dr. Mapother considered that if posture, as he contended, was a factor in the production of elephantiasis, elevation, friction upwards, and compression in the elastic bandages should be hopeful measures during the stage of inflammatory œdema.—Dr. SIMS WOODHEAD said the paper was most opportune, especially in relation to the blockage of lymphatics by organisms in leprosy. He thought all the changes had been most accurately described.

Cases of Permanently Displaced Head of Humerus and Abnormal Growth of Nail.

Dr. MOORE, in describing the above, said the first case arose in a child of six months by being thrown on the ground. The lad was now fifteen, and the chief points of interest appeared to be the wasting of the shoulder muscles, the low position of the head of the humerus, the facility with which the latter could be partially replaced, and its immediate displacement by gravitation. The second case occurred in a patient aged sixty-nine. There was a peculiar horn-like growth of the thumb-nail, and the phalanx of the thumb appeared to have been lost by suppuration.

On the Fourth and Fifth Dorsal Vertebræ in Health and Disease.

Dr. HARKIN, after a few general remarks on the subject of neurology, said that he was interested in that small area of the spinal cord limited and covered by the fourth and fifth dorsal spines, the very centre of the spinal column, which, whether in health or disease, is gifted with functions and phenomena peculiar to itself. That this limited area constitutes a zone of latent hyperæsthesia, present in every case of acute hysteria, chorea, trifacial neuralgia, and facial

paralysis, and other neuroses, had been known to him for the greater part of his professional life, and also that treatment applied solely to these apophysial points rapidly cures those diseases; but why a blister applied over the fourth and fifth dorsal vertebræ rapidly cured tic douloureux, or put an end at once to the vomiting of pregnancy, he could not explain to his own satisfaction, nor could eminent neurologists to whom he applied, including Brown-Séquard, throw any light on the subject. The almost universal existence of spinal hyperæsthesia over these points in health as well as disease is still more difficult of explanation. This spinal peculiarity he had found in every class, in the army, in the constabulary, in reformatories, male and female industrial schools, and in his ordinary *clientèle*, and private patients and friends. Some of his medical friends, while acknowledging its frequent presence even in the healthy, fail to evoke symptoms of undue tenderness in every case from want of faith or courage in applying the test—viz., the knuckle of the middle finger over all the dorsal spines. The clinical results after blistering are more freely acknowledged. Dr. Prince gives some remarkable cures effected by a blister over the fourth and fifth dorsal spines—among the rest one in a woman aged thirty-five, suffering from cervico-occipital neuralgia for five weeks, great tenderness over the cervical vertebræ, and rigidity of the muscles, with an expression of prolonged suffering. Dr. Browne, of Belfast, gives a case of facial paralysis in a man, of nine days' continuance, permanently cured by the application of a small blister over those vertebræ, and one of a lady suffering from coryza, with continuous discharge of clear mucus from the nares, and fits of sneezing which had troubled her for twelve months, and for which he had prescribed various remedies without effect. He applied a blister over the spine, and next day the discharge from the nares had permanently ceased.

At the meeting on Friday, Aug. 5th, Dr. Samuel Gordon (President) in the chair,

Dr. SIMS WOODHEAD described and exhibited large sections of Morbid Conditions of the Lungs by means of the magic lantern. The demonstration attracted a large audience.

Micro-organisms associated with Malaria.

Professor CROOKSHANK read a paper on this subject. He mentioned that his attention had been drawn to this subject by his discovery of flagellated monads in the blood of rats. This made him anxious to study the flagellated organisms described by Laveran in the blood of cases of malaria. Professor Crookshank reviewed the work of previous investigators, and described the *bacillus malariæ* of Klebs and Tommasi-Crudeli. He pointed out the fallacies in the views of the last-named, and considered that the researches of Laveran, Richard, and Marchiafava and Celli were more reliable. Through the courtesy of Professors Golgi and Marchiafava he had been able to confirm the observations of these writers, but he had not had an opportunity of studying the flagellated bodies. These occurred very rarely, and from the account given by Professor Marchiafava he should say they were not at all like the organisms in the rat. He was now directing his attention to the cases of malaria in this country, and hoped to have more to say on a future occasion for the present he was glad to have the opportunity of demonstrating the peculiar structures known as the *plasmodium malariæ* and the semilunar bodies of Laveran.

Various questions were asked by Dr. Russell, Professor Macfadyean, and Dr. Acland, to which Professor Crookshank replied.

Sectional Anatomy of Inguinal Hernia.

Dr. CUNNINGHAM contributed a paper on this subject. It was illustrated by a series of frozen sections, and communicated in the absence of the author by Dr. St. John Brooks. The sections were made through the body of a subject suffering from congenital inguinal hernia. After some remarks on abdominal anatomy in general, he showed how the peritoneum was displaced in the sac of the hernia, and explained how the gubernaculum testis played an important part in the formation of the hernia. He drew attention to the great accumulation of fat in the mesentery which was found in the sac of the hernia, and showed some interesting photographs of the sections.

Tubercle in the Dairy.

Dr. SIMS WOODHEAD and Professor MACFADYEAN made a communication on this subject. They gave the results of a series of observations on tubercle in cattle and in milk. They pointed out that tubercular ulceration and tabes mesenterica were comparatively common in children, and especially where there was impaired digestion. They looked for the cause of this in tubercular cattle. In 623 cases from thirty-seven dairies they found thirty-one in which there were diseased udders. In most of these they found micro-organisms, but in six only were tubercle bacilli present, and then very sparsely. In the udders of certain cases they found bacilli present in large numbers. They did not lay very much stress on their observations, but they thought that more attention should be paid to this condition by inspectors, and a careful inspection made of the udders of dairy cows.—Dr. W. RUSSELL thought there was very little doubt as to the possibility of the communication of tuberculosis by milk. The question of nidus necessarily arose. In the case of children perhaps the commonest affection among them was gastro-intestinal catarrh, and in such a condition there was probably a suitable nidus. If the continued observations of these observers should conclusively show that tubercle could be transmitted by milk, there could be no doubt of the duty devolving upon public authorities to have the cows regularly examined.—Dr. PURSER asked whether tuberculosis was common in the human mammary gland.—Dr. ACLAND stated that he had made many examinations of milk from tuberculous women, and had never found any bacilli. He did not remember having seen a single case of tubercular disease of the breast, although he saw many cases of women suffering from advanced disease of the lungs who continued to suckle their children.—Dr. GILBERT KIRKER asked as to the sanitary condition of the sheds, to which Professor MACFADYEAN replied.—Mr. HEDLEY thought that this investigation bore significantly on food supply. Cheese might become an agent in infecting people, unless the process of manufacture destroys the germ. Butter also might convey the disease.

Erythema Nodosum a Specific Infectious Disease, and the Bacteria found in the Disease.

Dr. MANTLE read a paper producing clinical evidence which he thought was suggestive of erythema nodosum being a specific disease. He adduced facts showing its development in the midst of scarlatina and in measles, but particularly pointed out its relationship with the former. He had seen an epidemic of erythema nodosum in which children were chiefly affected, and during this epidemic a disease of a very similar nature took place in swine. He quoted the opinions of Trousseau and Hebra, who regarded the disease as a specific infectious disease. He had examined five cases for bacteria, strict antiseptic precautions having been taken to prevent contamination, and had in each case found bacilli; but he did not argue from so slight evidence that the organisms were by any means the cause of the disease, but merely thought the fact perhaps suggestive.—Dr. BROWN said that in ten years his experience proved that erythema nodosum was not what we understood as an infectious disease. He had seen but very few, if any, cases of erythema nodosum in male adults. Nearly all cases occurred in young women, and associated with menstrual derangement, and by giving iron and aloes the case is soon cured. That there is a close relation between scarlet fever and rheumatism most medical men will admit. Frequently there is rheumatic pain in the joints in scarlet fever which can be relieved by salicylate of soda.—Dr. ARCHER said he was somewhat surprised to hear that erythema nodosum was an infectious disease, but, at the same time, to hear the theory propounded that it depended on a bacillus was not at all surprising to him, as it was the fashion now to ascribe every disease to micro-organisms. He had read a good many papers on the subject, and he did not believe that in any case had proof been brought forward to show that they were anything more than the effect of the disease.—Professor CROOKSHANK said that Dr. Mantle had laid stress on the supposed infective nature of erythema nodosum, and then had described a bacillus in connexion with the disease. This naturally led the last speaker to run away with the idea that this bacillus was characteristic of the disease, and that Dr. Mantle suggested a causal relation. No evidence whatever had been brought forward in support of the latter belief. As no preparations of the bacillus, in the blood, or from cultivations, were shown under the microscope, but only tube-cultivations, Professor Crookshank was only in a position to say that the bacillus presented on cultivation a reticulated pellicle, which was also a character of the *bacillus epidermidis* and other bacteria. No doubt precautions had been

taken against contamination, but that was not sufficient when the skin was involved, for the only means of avoiding error was to make control experiments by examining the organisms ordinarily present on the skin. He pointed out that Dr. Mantle had last year brought forward a bacillus which he associated with gonorrhœal arthritis, and this presented precisely the same cultivation appearances. In the absence of further proof he could only regard these as saprophytic bacilli. Professor Crookshank was of opinion that it was very praiseworthy for a medical man busy in practice to undertake these researches, and so keep up with the times, and he knew there was difficulty in making inoculation experiments. He urged, in such cases, the necessity for co-operation with a competent observer who had permission to make such experiments. The necessary evidence would then be forthcoming, and such a co-operator would doubtless suggest where observations must be controlled, and thus fallacies would be prevented from getting the upper hand. It was really a grave responsibility to publish such incomplete researches, because it led the sceptical to making such remarks as those which had fallen from the lips of Dr. Archer. Those remarks were a challenge to bacteriology, and he could not leave them unanswered. He desired, therefore, to emphasise the fact that bacteriologists, properly so called, were strongly opposed to any such fashionable or enthusiastic views in connexion with the study of pathogenic micro-organisms. Further, the statement that there was no proof to show that they had any causal relation was only an instance of how unjustifiable it is for anyone to dogmatise without any practical knowledge of the subject whatever.—Dr. ACLAND was surprised to hear such statements as Dr. Archer's in the Pathological Section, and instanced the case of anthrax, or woolsorters' disease, as one in which the causal relation of the micro-organism was universally accepted.—The discussion then became general, the weight of opinion being that no evidence had been adduced to prove the views of the writer of the paper.

Organisation of the Thrombus formed in an Artery after Ligation.

Dr. SHERIDAN DELÉPINE gave a short abstract of his paper on this subject. He pointed out that after ligation of one of the large arteries of the sheep the blood coagulates in the part of the artery where circulation has become impossible—i.e., between the seat of ligature and the first collateral branch above. This clot is not formed all at once. For nearly ten days the clot contracts; spaces are thus formed between the walls of the vessel and the central clot, and into these spaces fresh blood rushes, coagulates, and contracts in its turn; this causes a first stage of spurious or false vascularisation—i.e., vacuolation. The intima proliferates, the proliferation being most marked in the region corresponding to the proximal convex surface of the clot. From this point, especially, the cells of the intima grow into the clot, which is slowly absorbed as they advance. At the same time some of the cells are arranged so as to form a network of impervious embryonic vessels in the midst of the other cells and of the unabsorbed parts of the clot. At the end of the second decade the clot is practically entirely transformed into young connective tissue with embryonic vessels, and the vascularisation up to that time may be said to be rather potential than actual. As the clot is becoming absorbed, the space occupied by it gets smaller, the proximal surface of the plug of connective tissue taking its place becomes depressed, funnel-shaped, and the embryonic vessels begin to show a distinct lumen. By this time the muscular coat of the disused portion of the artery has almost entirely degenerated. Small cells and embryonic vessels are found penetrating into it from the intima and adventitia; these embryonic vessels meet, and when ultimately they become channelled, communication is established between the lumen of the artery, the vasa vasorum, and other vessels surrounding the artery through the vessels newly formed in the plug replacing the thrombus, and true or actual vascularisation at last may be said to exist.—Dr. WOODHEAD and Dr. ACLAND took part in the discussion, the latter drawing attention to Mr. Ballance's researches in connexion with this subject.—Dr. DELÉPINE replied.

The PRESIDENT regretted that time would not allow the Section to continue, and announced that Dr. Knight's paper "On certain Pathological Conditions of the Blood, with especial reference to their Action as Factors in the Manifestations of Empyema, Chlorosis, and Cutaneous Diseases," would be taken as read.

THE COLLEGE OF STATE MEDICINE.

As some of our readers may be aware, though we believe no public announcement of the fact has hitherto been made, an institution has been recently incorporated under the above-named title with the following objects:—1. To found, establish, and maintain, in or near London, an institution, to aid the theoretical and practical investigation and study of Sanitary Science, and of all matters relating thereto. 2. To aid the theoretical and practical investigation and study of other branches of State Medicine. 3. With a view to effecting these objects, to appoint professors to institute lectures and demonstrations, to issue publications of the Transactions of the Association, to found chemical and pathological laboratories, and a library. 4. To do all such other things as may from time to time be incidental or conducive to the attainment of the objects above set forth, or any of them.

It has been felt that in view of the increasing demand which is now being made for Public Health qualifications, some such provision as the above College is intended to afford was necessary; and although at most of the medical schools a course of lectures is given in Hygiene, it was felt that the class of men who wish to avail themselves of the instruction necessary for such diplomas would prefer attending an institution separate from any existing school, the candidates generally being gentlemen in practice or those who have for some time been qualified.

The Council of the College consists of Sir Joseph Fayrer, K.C.S.I (chairman); Sir John Watt Reid, Director-General (Navy); Sir Thomas Crawford, Director-General (Army); Sir Guyer Hunter, K.C.M.I., M.P.; Sir Henry Roscoe, M.P.; Sir Douglas Maclagan; R. Quain, M.D., F.R.S.; E. Klein, M.D., F.R.S.; Surgeon-General W. R. Cornish, Physician to Her Majesty the Queen; R. Brudenell Carter, Esq., F.R.C.S.; Surgeon-Commandant Cantlie; and others. We understand also that provision is made for seats on the Council, as *ex officio* members, of the presidents of existing Public Health Associations—such as the Sanitary Institute, Public Health Medical Society, &c.

There are to be two grades of membership—the Fellowship and Associateship. The former is to be conferred upon gentlemen eminent in any branch of State Medicine; the latter on those students of the College recommended for it, such students having first obtained a registrable qualification in Public Health. It is intended, however, in the first instance, to invite all gentlemen to become Associates who have obtained a Public Health qualification.

The course of instruction is not yet definitely arranged, but we understand it will include occasional lectures from eminent sanitarians, a course of lectures on Bacteriology, a course of lectures on Hygiene, and laboratory instruction.

The offices are at 26, King William-street, Strand, W.C., which, it will be noted, are also the offices of the Volunteer Medical Association and the headquarters of the Volunteer Medical Staff Corps; and we are informed that opportunities will likewise be afforded to Volunteer medical officers to get the instruction necessary to obtain the proficiency certificate.

THE THERAPEUTICAL SOCIETY.

To the Editors of THE LANCET.

SIRS,—I have the pleasure of announcing that Dr. Sydney Ringer, F.R.C.P.L., F.R.S., has kindly consented to accept the office of first President of the Therapeutical Society, provided that we can arrange the date of the inaugural address to suit his various engagements. I am sure that all the members of the Society will read this statement with great satisfaction. To have secured the leadership of such a world-known man as Dr. Ringer is to make the Society proof against adverse criticism, and to make it certain of success. By an error of mine in a former letter, which you were good enough to publish, I styled Dr. Rayner President of the Medico-Psychological Society, whereas I ought to have written *formerly* President. Again thanking you for allowing me the use of your valuable columns,

I remain, Sirs, faithfully yours,

Longridge-road, S.W. A. GEORGE BATEMAN, M.B.

THE LANCET.

LONDON: SATURDAY, AUGUST 20, 1887.

THE subject of sea-borne cholera in connexion with British measures of prevention, as opposed to European measures of restriction, was brought before the recent meeting of the British Medical Association in Dublin by Dr. THORNE THORNE, who acted as one of the delegates of this country at the International Sanitary Conference which was held in Rome two years ago with a view to the establishment of a universal code for preventing the importation of this disease; and the present occasion, when cholera is prevalent at several points in the Mediterranean with which the ports of this country are in communication, is an opportune one for considering how far the two methods in force for the prevention of cholera may be trusted to effect their intended purposes. The paper in question states that these two systems are in distinct antagonism to each other. The one which Europe as a whole trusts to, and to which, under the lead of the French, she has repeatedly given her assent at international gatherings, is a strict quarantine, disguised since the Rome Conference under the style of a "period of observation." The other is our system known as that of "medical inspection." The one, according to the author of the paper in question, "says to cholera: 'Hitherto shalt thou come, but no further;' the other, based on experience as to what is practicable in controlling the march of such a disease as cholera amongst civilised communities, has, above all, aimed at the removal from the midst of the people of those conditions which are essential to the spread of the infection."

The European epidemic of 1884-87 has afforded a means for testing the value of those alternative systems. France, foremost amongst quarantining nations, knew of cholera amongst her troops in Tonkin, but cholera entered France by means of infected transports; Italy then put France into quarantine, but cholera invaded her territory by means of coast and frontier provinces; Algeria insisted on rigorous measures of quarantine, but these did not avail to keep cholera from her ports; Spain dealt likewise with the infected countries, but her people suffered a terrible mortality from the disease, which reached her by means of a sea-coast province. In other words, quarantine, with all its modern improvements, turned out to be nothing more than a measure of useless restriction which was utterly disregarded by the advance of cholera. This recent experience is entirely in keeping with the previous history of cholera in Europe, and it fully justifies the irrevocable decision of this country to abandon a system more characterised by its barbaric and inhuman qualities than anything else. France, however, apparently clinging to the system for the sake of form, still advocates it in every capital where conferences assemble; and, knowing that the ten days' quarantine system advocated at Constantinople in 1866 has failed, and that the reduction to a seven days' detention proposed at Vienna in 1874 has shared no better fate, would imply that a still further reduction to five days, such as her delegates proposed at Rome, is, after all, the remedy. In the face of this, it is hardly a matter of wonder that the Rome Conference adjourned *sine die*.

We have so often referred to the real advantages of our alternative system, that we need only briefly summarise what is and has been done under it. All sick of cholera or diarrhœa are dealt with and isolated at our ports; but the healthy are not herded with the sick, as is done under a quarantine system. They are allowed to go where they will, provided they submit to proper supervision, by giving the address of the destination to which they are travelling. These precautions form, however, only the fringe of our system of prevention. Our population, knowing that the Government will no longer pretend to guarantee any measure of safety by drawing a quarantine line around the country, have of their own free will set themselves to remove from their midst those conditions under which imported cholera can alone spread; and, according to Dr. THORNE, they have, apart from all Government dictation, spent during the past ten years, by way of loan or in current expenditure, over eighty millions sterling, for purposes mainly of a sanitary character. When quarantining countries can give evidence of their faith in their alternative system by submitting to any such expenditure, then it will be time enough for them to urge that their system merits further consideration at our hands. Up to the present time, and this even in the Red Sea, which is looked upon as the gateway by which cholera may at any time enter Europe, the quarantine stations are not even provided with the common decencies of life.

Since our system of medical inspection came into operation it has gone hand-in-hand with a steady sanitary progress far exceeding anything to be met with in those European countries where the inhabitants are led to believe that quarantine restrictions will be imposed for their protection in times of danger; it has been accompanied by a great diminution in mortality, and it has spared the inhabitants of this country from an untold amount of misery and destitution, which "is the more burdensome because it follows in the track of preventable disease and death." That our system is complete we do not for a moment pretend, and we would make no boast of the fact that imported cholera has on each occasion, for many years past, been at once checked in this country; but we do hold that the experience of the past few years has once again indicated the uselessness of quarantine and the great advantages of the system we have substituted for it. Quarantine has "a blighting effect on sanitary progress"; it leaves a people unprepared to face a disease which disregards the antiquated barriers which nations have opposed to its extension, and so it prepares the way for panic. On the other hand, the steady progress of true measures of prevention tends to impart that feeling of confidence which is of such value in the face of an impending epidemic, and at the same time it promotes the healthiness and well-being of the population.

FOR a large proportion of what are regarded as people of the "better" classes in this country there are scarcely any regular "meal-times." Those who are able to dine at a fixed hour for the most part take breakfast, luncheon, and

any other meals they may have, at odd times, more or less uncomfortably. Paterfamilias rushes his morning meal to catch a train or keep an appointment, snatches his mid-day meal how he can, and when he contrives to dine at home or to keep a dinner engagement, is either hurried or late, and therefore generally more or less ill-prepared for the really serious physiological feat of eating at one sitting enough to supply nutriment to the organism for the greater portion of the succeeding twenty-four hours, let what may be taken out of brain and body during that period; for the very large class of busy men to whom we are now alluding take very little to eat, although many consume a proportionally large amount of stimulating beverages when they are not feeding. The unmarried men of this order are even more irregular in their mode of taking food than their elders. Albeit they may be "diners out," they do not for the most part eat. Even admitting that the majority of men have been in times past, if they are not now, in the habit of eating too much, it is astonishing to observe how very little, with all his parade of appetite, and real or pretended *gourmet* airs, the average man of pleasure or fashion actually consumes. Materfamilias and her daughters are equally irregular in the supply of their needs in the matter of nutrition. They rise late, or, if not that, they either ride or walk before breakfast in a way differing greatly from the old-world practice of taking healthful exercise with a view to eating a good breakfast. The prevailing whim is the affectation of a continental *penchant* for breakfast about noon, which means an early luncheon, but for the most part falls short of an adequate mid-day meal. In short, women-folk "peck" at a late breakfast, at luncheon, and again, more demonstratively, at dinner, counting it a feminine grace to have small appetites, and almost vying with each other in their pretty winning way to pass nearly all the dishes. Doubtless in some way women eat enough, but their food is so taken as to digest with great difficulty and not a little distress. Probably most of the forms of dyspepsia increasingly common among women may be traced as their efficient cause to the habit of perpetually worrying the stomach with food, instead of feeding regularly at timely meals.

It has been hinted that, perhaps, we ought to assume that too much in the aggregate, or too bulky food, is habitually taken. In the ideal future of our species' development, man may perhaps take his food in the highly concentrated form of pastils or lozenges, or, dispensing altogether with the gastric organ, he may see fit to be nourished by some irregular mode of absorption. For the present, however, and for some generations to come probably, man will be compelled to take his food *per orem*, and the stomach is, and will continue to be, sufficiently important an organ in his economic apparatus to deserve, as it demands, deferential consideration, and such wise treatment as may minimise its labour and reduce to the least point the wear and tear it undergoes in fulfilling the systemic requirements. The first condition of health in a hard-working organ is regularly remitting strain and work, and punctually recurring periods of rest with opportunities for recuperation. To ensure the satisfaction of this orderly need there must be regular "meal-times," and we are well persuaded that the majority of dyspeptics would find their disabilities in the work of digestion greatly reduced if only they would make it a rule to eat regularly, moderately, and slowly. Irregular meals, at which the stomach is overloaded with materials consumed in haste, are the fruitful sources of distress and inconvenience in the function of food-taking. Indeed, the time and manner of taking food are almost as important as the specia character of the food we take. A dietary table should always particularise the hours for eating and drinking, and those who undertake to minister to the needs of the dyspeptic ought, we think, to lay very great stress on the time and manner of food-taking. The most nutritious diet loses half its value—if, indeed, it be not absolutely wasted—when it is thrown into the stomach, as it were, in shovelfuls, at odd times, without the smallest regard for the condition of that organ or the presence or absence of digestive secretions which are essential to the due performance of the alimentary functions. Economy, health, and in a large measure happiness, depend very seriously on the wise ordering and regularity of our meal-times; and those who are wise will see to it that this primary obligation of a physiological life is duly discharged.

FROM a Memorandum which has been issued by the Local Government Board, it would appear that the central authority have been in communication and in personal conference with the authorities for the city of Oxford on a matter which is becoming of primary importance as regards the future healthiness of many of our towns and cities, and that as yet Oxford does not see its way to initiate a change which is very urgently needed. The matter relates to the provision of a reasonable amount of open space behind new dwelling-houses, and the Local Government Board, having failed to convince the Oxford Board that injury was being done by the want of a proper bye-law to deal with this subject, instructed Dr. THORNE THORNE and their architect, Mr GORDON SMITH, to inspect the city and its suburbs, and to confer with the local authority on the subject. The result of this visit is set out in the Memorandum in question, and it appears the reverse of creditable to those in whose hands the future interests of Oxford are vested.

The model code of bye-laws issued by the Local Government Board includes a clause requiring that all new buildings shall have a certain amount of open space in front and to the rear. The space to the front is almost always provided by the street itself; that to the rear has to be provided on the land belonging to the house. The principle embodied in this requirement is one which must command the assent of all sanitarians, for without space to the front and to the rear of a house there could be no windows in those positions, and no proper ventilation of the dwelling; besides which, the continuity of the open spaces is essential to that due ventilation around and about houses which is contemplated under the Public Health Act. The actual minimum space to the rear asked for under the model bye-law is a space measuring fifteen feet by ten feet, and even on this a closet and an ashpit may be placed. As the house increases in height, so does the required open space increase in area. Such a minimum space appears to be little enough, and there are a number of sanitary authorities who

are not content with so little, and insist on a larger amount. But the Oxford authority declines to adopt it, and regards it as excessive for the purposes of the city.

The main difficulty arises with regard to the re-erection of existing houses, for, as the inspectors state, the houses in the principal parts of Oxford are densely crowded together, very many covering the entire area of their premises, and others having to the rear what are in effect mere shafts inadequately serving to admit light and air. Indeed, a bird's-eye view exhibits hardly anything but roofs and buildings. The inspectors appeal to the Ordnance maps in proof of their statement, but they add that since these maps were drawn the evil has materially increased, and instances are given to show that a city with courts and alleys already to excess is getting worse and worse in this respect. Here lies the grave evil to be met, and the question which Oxford has had to decide is, whether the mischief is to go on unchecked, or whether an effort is to be made to remedy it. So far Oxford's health representatives have decided to allow the existing evil to grow into a worse one; and they have done this in the face of offers of compromise, which, if they err, do so on the side of excessive leniency. Thus, the difficulty of dealing with the undue aggregation of houses in certain parts of Oxford was admitted, and to meet it, it was suggested that the bye-laws dealing with this subject might be so framed that they should not affect re-erections, provided the new buildings did not exceed the present ones either in height or in extent of ground covered. Now, considering that some existing houses have no open space at all belonging to them, concession could hardly go further. But the modification was not assented to, one reason being that it would cause irregularities in the heights of adjoining frontages. How this difficulty is to be overcome apart from bye-laws we do not know, for no authority has power to require uniformity as regards height of adjoining houses.

Failing this, the inspectors proposed another compromise, and this was that the area of the city in which the main difficulty arises should be defined, and that this area should be altogether exempt from the operation of the new bye-laws. This was met by proposals following one on another that this and that area should be exempted, until it was evident that the proposals submitted were altogether unreasonable. On this it was clear that Oxford declined any bye-law dealing with this important subject which could reasonably be assented to; and the conference had to be dropped.

The difficulty which has arisen at Oxford is certain to arise elsewhere, and sanitary authorities would do well distinctly to understand what their duties to the public are in this respect. Owing to a want of proper control in the past, houses have in many towns and cities become unduly aggregated together, and such houses have often, owing to the mere accident of position, and in no way owing to any expenditure on the part of their owners, acquired a value which is to a great extent fictitious. If such houses are to be rebuilt on a more expensive scale, and with the same or even a greater disregard to the requirements of public health, the difficulty of securing a remedy is indefinitely postponed; and the legalisation of a bye-law to prevent this evil is no more an interference with private interests than are numberless other provisions of the Public Health Act, which is throughout based on the principle that private interests must not stand in the way of the requirements of the community in the matter of health. Oxford, a centre of learning, disregards this, and that in view of the probability that its densely-crowded areas may become more crowded than ever, that its courts and alleys may be more confined than they ever have been, and that the breathing spaces which still remain behind the houses may be altogether covered over and shut in by loftier obstructions to ventilation than those which now exist. The result is to be deplored in the interests of future generations, and on those to whom the decision is due a heavy responsibility must rest.

THOSE very energetic persons to whose persistency we are indebted for the repeal of the Contagious Diseases Acts seem determined not to let the grass grow under their feet. They have altered the title of their Association. It is no longer the National Association for the Abolition of State Regulation of Vice, but the National Association for the Defence of Personal Rights. With this avowed object in view, they have addressed a memorial to the Secretaries of State for the Admiralty and War Departments, and to members of both Houses of Parliament. It is marked "important," and is a very remarkable document. The memorialists, having learnt that the Government have recently granted subsidies to certain hospitals for the treatment in special wards of women suffering from venereal diseases, desire to protest against any such use of public money. The reason assigned for this protest is original, if illogical. It appears that in 1875, just twelve years ago, representatives from twenty of the most active Associations for the repeal of the Acts met, and for *two* days carefully considered certain proposals then made for subsidising or maintaining lock hospitals or lock wards in hospitals, in lieu of the arrangements authorised by the Contagious Diseases Acts 1866-69. The result of this *two* days' deliberation, we are now informed, was a unanimous declaration in favour of admitting cases of venereal disease into general hospitals and infirmaries, as one among the many forms of suffering which it is the purpose of those institutions to relieve. It is also contended that the present House of Commons is bound by a vote of last year, which rejected an amendment of Sir JOHN KENNAWAY providing for the continuance of voluntary lock hospitals supported by the Government. The whole tenour of the memorial is, like most of the literature proceeding from the same source, inaccurate and misleading; ingenious, but very disingenuous. It would, indeed, be unworthy of notice were it not necessary to refute statements put forward with such persistency. The making of grants of money by the Government to lock hospitals and wards in Portsmouth and Plymouth was allowed without dispute many years before the first Contagious Diseases Act (that of 1864) was passed. The Westmoreland Lock Hospital of Dublin has been supported by a Government grant ever since its opening in 1792; and though it has been proposed to discontinue the annual grant, it is on the grounds of its not being a clinical hospital, and not because the principle of supporting such hospitals is condemned. Moreover, one of the strongest arguments used

against the Acts by their opponents was that the same, or even greater, results might be achieved by voluntary lock hospitals and wards. They also urged that if the Acts were only repealed, these latter would be liberally provided by the public. So far from this having been the result of their repeal, the Government have been practically compelled to make the grants objected to. The proposal to admit women suffering from venereal diseases into the wards of general hospitals and infirmaries, without distinction, is one the impracticable nature of which scarcely needs comment. To place a married woman infected by her husband with syphilis in the same ward with medical or surgical cases is a proceeding which could never be sanctioned by the managers of any hospital or infirmary; while to admit a prostitute, however penitent she might be, would be simply an outrage. Patients suffering from these diseases must be kept apart from other patients, in separate wards, with separate waterclosets, eating and drinking utensils, washing apparatus, and conveniences of every kind. These requirements are so obvious as to need no argument, and lock hospitals and wards must continue so long as venereal diseases prevail. The truth is, that the tide of public opinion is slowly but surely turning against those who caused these Acts to be repealed. Only a little more experience of the disastrous results which have followed will cause their restoration to be demanded with a force which will sweep away all opposition to the winds.

Annotations.

"Ne quid nimis."

THE INTERNATIONAL MEDICAL CONGRESS.

THOSE Europeans who intend to take part in the International Medical Congress are beginning to wend their way across the waters. The programmes are not yet given in much detail. The Congress will be opened by the President of the United States, at Albaugh's Opera House, on Monday, Sept. 5th, at 11 A.M. This very fact stamps it with an international character. It stands, too, in the series of International Congresses, and will represent to the world the state of medicine as a profession and an art. This fact is enough to invest the meeting with high importance, and to make us wish, as we do devoutly, that it may prove worthy of its predecessors, of the series of which it is a member, and of the great nation of which it is the guest. We are well aware that all has not gone smoothly with it, and that our brethren in the States have been keenly divided as to methods of procedure and questions of membership and precedence. We have no wish to judge between them; but we have never been able to see that the Congress can be treated disrespectfully, or even coldly, without the profession itself suffering. It ought to be the endeavour of all concerned to minimise differences, and even at the eleventh hour to make this Congress great and effective. Meanwhile we may call attention to a circular, issued by the New York Bureau of Information, which contains the following "instructions to visitors":—

"Washington is 200 miles from New York—six hours by cars. Foreign steamers to New York land at New York or at Jersey City and Hoboken, opposite New York. The New York Bureau of Information have engaged a reception parlour in the Hoffmann House, corner of Broadway and 25th Street. The Broadway car line, which is crossed by the car lines from all the steamboat landings, passes in front of the hotel. Rooms at the Hoffmann House, which is conducted on the European plan, can be obtained through the committee at a reduction of 25 per cent. One or more of the Reception Committee will be in attendance between 2 and 4 P.M. each day on and after August 20th. At other hours the clerk of the hotel will act for the committee. Members intending to attend the Congress are requested to send their names in advance to the Reception Committee, Hoffmann House, New York, so that the committee can secure for them reduced hotel and railroad rates."

CHOLERA RUMOURS.

RUMOURS of choleraic diseases in this country tend to arise at this time of the year. One instance occurred some three weeks ago at Newton-Poppleford, where Dr. Pullin, who has had experience of cholera, met with a case which terminated fatally in twenty-four hours, after presenting, according to his report, the symptoms of the Asiatic and malignant disease. The case was that of a farmer, who, after having indulged somewhat freely, was affected by the excessive temperature; and Dr. Pullin is reported to have set the disease down as due solely to the heat to which the patient had been exposed. The sanitary surroundings of the man's residence were excellent, and no other condition indicating any suspicion could be detected. Similar rumours also come from Marylebone, but the cases in question are properly classed amongst those severe diarrhœal affections of which a few always occur in England at this time of the year. The symptoms they not unfrequently present do admittedly most closely resemble many attacks which occur during a prevalence of true cholera, but this circumstance alone is no proof that the infective disease is in our midst, and it is important that those meeting with such cases should not cause unnecessary alarm by resorting to a nomenclature which is only intended to cover cases of the infectious Asiatic disease.

THE CASE OF ISRAEL LIPSKI.

THE extraordinary measures that are being taken to discover further evidence that may shed light on the Batty-street murder shows at least that there is still a considerable amount of mystery enshrouding the case. Many points now being investigated ought, in our opinion, to have been cleared up at the time of the trial, instead of being considered during the respite of the prisoner, who has to linger in suspense, with the gallows ever present to his mental vision. That Miriam Angel was murdered there can be no manner of doubt. It seems equally clear that in the first instance she was rendered insensible by blows on the temple, and afterwards suffocated by strong nitric acid. There is a strong chain of circumstantial evidence, which on the face of it tells strongly in favour of the conviction recorded at the Old Bailey, but it is not enough to warrant the death sentence being carried out that the facts fit the theory of Lipski's guilt; it must be shown beyond reasonable doubt that they are inconsistent with any other hypothesis. As regards motive we are not inclined to lay much stress one way or the other, as the proximate cause of crime is too frequently unknown, and of course still more frequently inadequate to the particular offence. Nevertheless, in this case the motive being entirely conjectural, as negative evidence it should on technical grounds be counted somewhat in favour of the innocence of the convict. If it could be conclusively shown that the door of the room in which the dead body of Miriam Angel and her supposed murderer were found was actually locked on the inside, and that it was impossible that the key could have been turned by some person outside the room, there would be an end of the case; but from the reported testimony it appears by no means clear that the door was locked, and, moreover, there

is reason to suppose that, either by the use of some instrument or by temporary removal or displacement of a portion of the partition woodwork, the key on the room side of the lock could be reached. It is matter of the highest importance that the authorities should satisfactorily explain the position in which Lipski was found with a box in front of him, and with his acid-stained coat covered with the coat of the deceased woman's husband, which had previously been hanging in the room. Had Lipski committed the murder and afterwards attempted suicide, one would not have expected to find what to our minds is strong presumptive evidence of foul play practised on Lipski himself, evidence consistent with the convict's story of the occurrence. And, again, assuming that the theory of the prosecution was correct, was it not strange that no sounds were heard by Simon, and possibly by Schmuss, who, according to the statement of the convict's solicitor, were one or both in the house at the time the murder is believed to have been committed? We can conceive that the abrasions on Lipski's elbows may have been caused in more ways than one; but obviously they were more likely to have been inflicted in the manner suggested by the defence—viz., whilst Lipski, lying on his back, was offering resistance to an assailant. It is doubtful if the quantity of acid employed can be more than rudely guessed at, for it is so powerfully corrosive, and causes such obvious stains, that, in common parlance, a little goes a long way. And since the purchaser of the acid cannot be positively identified, can it be expected that much light will be thrown on the case from inquiries directed to this end? We trust Mr. Matthews will base his decision on a general consideration of the whole affair, and not in any way limit himself to the determination of the question of "a life against a bottle." After careful and anxious inquiry, and after balancing the evidence, we unhesitatingly avow that Lipski's guilt has not been proved beyond reasonable doubt. In saying this, we do not desire to cast any aspersion on the jury who tried the case. Their duty must have been a painful one, and their task unusually difficult, for, as the learned judge observed, the case was the most extraordinary he had met with in his judicial experience.

A correspondent, whose opinions on medico-legal questions are entitled to the greatest weight, sends us the following remarks on the medical aspect of Lipski's case:—"The medical aspect of the Lipski case has received much less attention than it deserves. The question which is most, and indeed vitally, important is—Whether the man now under sentence of death could become insensible, or could render himself insensible, under the circumstances reported at the trial and at the preliminary inquiries. Had Lipski been found on the bed upon which the murdered woman lay, or had he been found on the floor of the room between the bed and the floor, or near the window, it might be supposed that he had fallen in syncope, from which he had not rallied at the time he was discovered. But he was found unconscious under the bed, with an egg-box in front of him, and we have therefore to assume that he crept there to faint, or else to render himself insensible by some stupefying agent. The hypothesis is incredible, if not impossible, and as far as I know, has for its foundation not one tittle of medico-legal experience. I have sought in vain for anything in the records of forensic medicine that would lend support to such a view, and in my experience it has nothing that could give it the slightest countenance. Another point is the nature of the insensibility. It was not from syncope. It does not tally with the unconsciousness that would be produced by any known anæsthetic or narcotic. It would, however, be accounted for as due to the effects of a stun by a fall or blow, and belongs, without any doubt, to the condition known as cerebral or cerebro-spinal shock. These circumstances all tend to favour the widespread feeling that the guilt of Lipski is not sufficiently certain to allow the nation, with a clear conscience, to commit the irrevocable act of taking the life of a fellow human being, however dark may be the suspicion which appears to cling to him."

RABIES IN DOGS.

THE report from the Select Committee of the House of Lords on rabies in dogs is decidedly satisfactory. Whilst admitting the value of universal muzzling for a period, say of twelve months, with a view to the extirpation of the disease, the committee thinks that this, to prove of real efficacy, should be supplemented by an almost impossible exclusion of foreign dogs. The committee also considers, and doubtless with good reason, that the seizure, detention, and destruction of stray dogs, and the unusual care which dog owners exercise under pressure, are of no little avail in bringing about a diminution of the disorder. The committee rightly think that it is not within their province to discuss or question the conclusions of the committee appointed by the Local Government Board to inquire into Pasteur's treatment. We sincerely hope, as we have hitherto advocated, that the treatment may, in the words of the report, "be applied not only in Paris but in every place where the need may exist and scientific skill be found." The second paragraph of the report asserts that "it is practically proved that subcutaneous inoculation with its virus is the only ascertained means of imparting the disease, and that in order to check it every effort should be made to prevent the dissemination of the infective substance." This is a careful and well-guarded statement, for it asserts nothing more than the facts fully justify as ascertained by Victor Horsley, Nicols, Fleming, and Brown, whose evidence also went to prove that the disease had not originated spontaneously, though it is admitted that it cannot be absolutely demonstrated that rabies does not arise *de novo*. We are glad to observe also that the report states unreservedly that climatic conditions and special treatment of dogs have no influence in the causation of the affection. Without following the report closely, we may say that its statements and conclusions are quite in accordance with those which are accepted by the best authorities, on whose evidence, indeed, the statements and inferences have been drawn up; and the recommendations of the committee, which we printed last week (p. 336), will meet with the reasoning assent of all who have carefully studied the subject.

THE PECULIAR PEOPLE AGAIN.

JAMES RUSH, a labourer of Steeple, has been sent to prison for a month by the magistrates in petty sessions at Latchingdon, Essex, for neglecting to provide medical attendance for his child, who, after measles, was found to be suffering from ophthalmia and eczema of the face in an aggravated form. In all previous cases where parents have been so charged the patient has died. Here the child still lives, but in much suffering, and—according to Mr. Gorton Coombe, medical officer of health—with the sight of the left eye almost entirely gone. The only defence that Rush made was that "he trusted in the Lord." The magistrates told him that he had treated his child most cruelly and unnaturally, which, of course, he denied. The prosecution was at the instance of the Board of Guardians, whose attention was called to it by Mr. Gorton Coombe, who received information of the case in his capacity as medical officer of health of the Southminster district. The case is a pitiable exhibition of stupidity and ignorance. The medical officer of health would have failed greatly in his duty, and would indeed have been guilty of great inhumanity, had he not exposed the facts and thrown the responsibility of dealing

with the parents on the guardians, who in their turn very properly threw it on the magistrates. The result is not a very brilliant one. The father is sent to prison, and the child is left to the care of its mother. She has been urged to allow the child to go to Maldon Workhouse, but she is taking time to think over the matter. It would seem only reasonable that the guardians should quickly give the mother the choice of placing the child under proper medical care or punishing her as they have the father. On religious grounds alone the behaviour of the Peculiar People is absurd, and unmindful of the great Teacher, who said they that are sick have need of a physician; and on humane and social grounds it is clearly right, as it is legal, to see that children have the prime necessaries of life and health supplied to them when their parents fail in their duty. There is a disease known to medical men in which such neglect as this might involve the speedy loss of both eyes, and in which medicine is capable of effecting a quick and complete cure. Will the most ardent champion of parental liberty argue that a parent is at liberty to throw his child into complete blindness on a fanciful and conceited reading of an isolated passage of Scripture? It is the very business of civilisation to curtail such freedom as this, and to bring the peculiarities of the peculiar into decent conformity with the common sense of mankind.

PROFESSOR POTTER (OF SAN FRANCISCO) AND HOMŒOPATHY.

DR. SAMUEL POTTER, Professor of Theory and Practice of Medicine in the Cooper Medical College, San Francisco, author of the "Index of Comparative Therapeutics," to which so much reference has been made by Dr. Brunton's critics, writes a long and able letter to vindicate himself from the charge of having ever practised homœopathy (though he admits having graduated in a homœopathic college), and from other charges equally inaccurate. We do not think that the censure of Dr. Potter's critics needs such lengthened and careful refutation as Dr. Potter gives it. It is enough to notice his chief reasons for abandoning an exclusive system, all that was good in which, he says, was based on Haller's suggestions in his preface to the Swiss Pharmacopœia about 1775, forty years before Hahnemann's pretentious and absurd doctrine had developed. "I abandoned homœopathy," he says, "before entering into practice, because my observation of the reception by homœopaths of Dr. C. Wesselhoeft's reproving of Carbo Vegetabilis, and Dr. Sherman's work on the Milwaukee Test of 1879, proved to me that no crucial drug experimentation conducted under scientific safeguards could meet with any degree of appreciation from the majority of that sect. I was further impressed by finding that ninety-nine out of every hundred so-called homœopathic physicians were in the habit of resorting to regular therapeutics whenever there was any active therapy to be done."

"SLEEPING FOR THIRTEEN MONTHS."

ANOTHER case apparently of hypnotic unconsciousness has been discovered by the newspapers. The patient is a Russian aged forty-three, who has been for thirteen months in a state of unconsciousness in the workhouse at Walton, under the care of Mr. R. McG. Anderson, from whom we learn that the particulars as published are substantially correct, but for this important detail, that the "very remarkable feature of the case" concerning the patient's readiness to take food is a misinterpretation, for liquid food was simply swallowed by the patient in a reflex and unconscious manner. The loss of mental activity appeared to have resulted from the effects of the hot weather in July, 1886, and it is certainly possible that the "sleep" may have been excited by this cause, but it would be necessary to suppose also that a certain predisposition to loss of consciousness must have formed a part of the man's constitution. As far as we have been able to gather from the record of the case, there seems to be no reason to doubt the diagnosis of this case as being a genuine one of hypnotic sleep, not induced by drugs, or by any tangible morbid state of the blood or nervous centres, but best defined, in the present state of our knowledge, as a peculiar functional disturbance of the grey matter of the cerebral cortex, possibly akin to that which occurs in ordinary sleep, and probably affecting a very large area of the perceptive and sensory centres of the cerebral hemispheres. Comparing the healthy brain for the moment to magnetised iron, we may look on this hypnotic state as iron which has been demagnetised by some slight but efficient cause.

THE PROPOSED NEW UNIVERSITY.

IN the House of Commons on the 12th inst., in answer to a question from Mr. Bryce, Mr. W. H. Smith said that no petition had been presented to the Queen in Council from the Royal College of Physicians of London or the Royal College of Surgeons of England asking for a Charter for a representative body of those Colleges to examine for and confer medical degrees. Caveats had been received in regard to such a Charter from various quarters and from five of the Universities. A petition to Her Majesty in Council had, Mr. Smith stated, been received from University College and King's College, London, conjointly, and also from the Association for promoting a Teaching University for London, in favour of a new University for the London district. The grant of the Charter was opposed by the London University. The petitions were submitted to the Queen in Council on July 12th, and were referred by Her Majesty to a committee of the Lords of the Council to consider and report thereon. It is competent, said the right hon. gentleman, for any persons or bodies interested to petition Her Majesty in Council at any time before Sept. 1st, and subsequently the whole question will be considered by the committee.

THE EARLY SIGNS OF LOCOMOTOR ATAXY.

Dr. MAX KARGER has published as a graduation dissertation in the University of Berlin an account of a number of observations made on 117 cases of locomotor ataxy in Professor Mendel's clinic, with the view of detecting the early symptoms of this disease; for, as he says, the great hope of a really rational and satisfactory method of treatment lies in the recognition of the existence of the disease in its earliest stages. The history given by the patients established a connexion between syphilis and locomotor ataxy in 53 per cent. of the cases. In the earlier stages he found symptoms affecting sensation, lancinating pains, numbness, especially of the lower extremities, cord-like sensation round the waist, retardation of the rate of conduction of sensations, and, what he looks upon as especially important, being almost always present, the so-called Romberg's symptom—i.e., the inability or great difficulty of balancing the body when the feet are placed parallel and close together, the eyes being shut,—which, however, he does not consider is due to the ataxy, but thinks it is an abnormal condition of sensation. With regard to ophthalmic symptoms, he finds that at the commencement of locomotor ataxy there is a diminution in the acuteness of vision, and a concentric contraction of the field, amblyopia and amaurosis, which were due in 35 per cent. of the cases to atrophy of the optic nerve. Then there were slight and transitory paralyses of the eye muscles. Insensibility of the pupil to light was found in 66 per cent. of the cases, and was due sometimes to a paralysed condition of the sphincter, and sometimes to disturbances of reflex action. With reference to the patellar reflex, the author thinks it has been considered to be absent rather too

universally. He found it in eight of his 117 cases. The bladder reflex was often diminished, so that chronic vesical disease, the cause of which is not to be made out, ought to lead a medical man to think of tabes. Impotence was much more common than any increased sexual reflex. Very rarely gastric and cephalic "crises" and joint affections were noted. The author suggests that complaints of a vague nature, such as nervous pains, eye or bladder troubles, should lead the physician to make a thorough examination with special reference to the want of patellar reflex, Romberg's symptom, and the want of reaction of the pupil, as these objective signs do not necessarily give rise to any subjective symptoms.

CHOLERA INTELLIGENCE.

NEWS of cholera in Europe is still limited to Italy and to Malta. So far as the mainland of the kingdom of Italy is concerned, the only news as to the cholera comes from Naples and the neighbouring town of Resina in the bay. As regards Naples the intelligence is very conflicting, but there can be little doubt that true cholera prevails there to some extent. At Resina there was, during the close of last week, a daily record of deaths varying from two to five in number, but since then it is stated that material improvement has taken place. In Sicily the disease is still prevalent in the provinces of Palermo, Messina, and Catania, but apart from Palermo there is a diminution in the number of attacks. In Malta over seventy attacks and forty deaths occurred in the week ending the 15th inst., the daily record of deaths varying from thirteen to two. So far, there is no news of any attack amongst the troops garrisoned in the island. Cholera is also prevailing widely in Northern India; the exceptional prevalence of the disease being attributed to a heavy and continuous rainfall ensuing on drought. On the 15th inst. a telegram was received from Simla to the effect that the medical returns from the North-West Provinces showed that 70,000 persons had died there from cholera during June and July, this being at the rate of 1 per cent. of the population.

SPINAL CURVATURE.

IN a clinical lecture by Dr. Mollière, surgeon to the Hotel Dieu in Lyons, upon the etiology and treatment of curvature of the spine, the causes are divided into three main groups: 1. Affections of the head and neck, including astigmatism, enlarged cervical glands, goitre, contraction of the sterno-mastoid, and hysterical or other paralyses of the muscles of the neck. 2. Affections of the lower extremities, including congenital dislocation of the hip, coxalgia or "growing pains" in the hip, knock-knee, rickets affecting the tibia, fractures with shortening, a relaxed state of the foot and other ligaments, and juvenile paralysis. 3. Affections of the vertebræ themselves, or of the thorax, causing true or essential curvature, including pleurisy and excessive exercise of the muscles of one side—such, for example, as existed among the early pressmen, who are represented in old caricatures with a hump near the left shoulder. In addition to these causes, it must be confessed that in a large number of instances there are others which cannot so satisfactorily be made out. Dr. Mollière has given a good deal of attention to this subject, studying the thoracic functions of hunchbacks and examining such muscular theories as appeared to present any hope of a solution of the question. Is, he asks, curvature caused by paralysis of the muscles on the opposite side, as is supposed by some writers? Post-mortem examinations of hunch-backed women negatived this theory, as no muscular or nervous lesion could be found, and no compression of vessels or nerves in the vertebral foramina. Again, is curvature due to muscular contraction on the affected side? Still less is this the case, for the electrical conditions of the muscles and the want of success in the divisions of muscular tissue proposed by M. Guérin both show the incorrectness of this theory. In order to elucidate the subject, M. Mollière some years ago divided three of the intercostal nerves of one side in a young rabbit close to the foramina, reuniting them immediately. The rabbit became hunchbacked, the curvature being on the side operated upon. The animal was allowed to grow up, and was then killed and examined. No trace of the operation could be discovered, the cicatrisation of the nerves being perfect, and no muscular or nervous lesion being discoverable. This experiment proves, according to M. Mollière, that true curvature of the spine is due to temporary paralyses of the intercostal muscles during youth. These paralyses pass away, but the curvature which is produced on the paralysed side remains. In these cases the hope of cure lies in a rational system of gymnastics; but if the curvature is very great, a jacket should be applied while the patient is in a hanging posture.

"STOOPING FORWARDS."

EVERYONE knows that stooping forwards, particularly after rising quickly from bed in the morning, when the stomach is empty and the heart has less than ordinary support from the viscera below the diaphragm, is very apt to occasion a form of faintness with vertigo not unlike that which occurs in sea-sickness. We do not at the moment speak of the faintness and giddiness from cerebral anæmia, which are directly consequent upon suddenly assuming the erect, after long continuing in the recumbent, posture; but of the more alarming sensation of being in the centre of objects which are rapidly passing away, usually from left to right, with loss of power to stand or even sit, and an almost "nightmare" feeling of inability to call for help or do anything to avert a catastrophe, while throughout the experience the sufferer retains painfully acute consciousness. This, we say, is familiar as one at least of the effects not uncommonly produced by stooping forwards under the special conditions indicated. With many other varieties of the vertigo consequent upon heart weakness or cerebral anæmia observation or experience has made us all acquainted. We cannot, however, help thinking that the consequences of even partial compression of the veins of the neck, offering an obstacle to the return of blood from the head, with its important organs, are not so well recognised. The peculiar form—or, more accurately, the several forms—of headache distinctly caused in this way when the head is long bowed forward on the chest, bending the neck on itself, cannot fail to occur to everyone; nor will the high tension of the eyeball, the turgid and heavy eyelids, the snuffling nose, the deafness, with buzzing or throbbing in the ears, the heavy breathing, and the puffed and perhaps flushed or darkened colour of the face, resulting from the obstructed venous circulation through the bended neck, be forgotten. There are other and more perilous, though secondary, effects of leaning forwards when the heart is weak, or the bloodvessels are not so strong as they ought to be, which should not be overlooked. Beyond question the extra strain thrown upon the apparatus of the circulation by anything that impedes the free passage of blood through almost any part of the venous system is more severe and dangerous than a *physically* equal strain thrown on the arteries. At least, this is so in adult life, and, without going further into details in connexion with the *modus operandi* of the mischief to which we point, it may be permissible to urge that the subject is one to which attention may be usefully directed. The weakly, and those who are not unlikely to have hearts readily overburdened, and bloodvessels easily stretched beyond recovery,

or even ruptured, should be warned quite as earnestly against suddenly assuming, or too long retaining, postures which do—however slightly and partially—impede the return of blood through the veins. We know how prolonged sitting may cause the veins of the legs to become distended, and either give way or permit the extravasation of their contents. When this sort of thing happens, even though in comparatively trifling degree, in the case of vessels directly connected with such delicate organs as the eye, the ear, and the brain, it is easy to see that the results may be very serious in their character; and, probably, few postures commonly taken up by persons who lead somewhat sedentary lives are so prone to do mischief unnoticed as that of "leaning forwards," as at work at a table which is not sufficiently high to ensure the head being so raised that the veins of the neck may not be in any way compressed or the return of blood from the head embarrassed or delayed. We see reason to believe that if this apparently small matter were more generally understood there would be fewer head and heart troubles, and we will go so far as to say that some lives now lost would be saved.

REFLEX AUDITORY NEUROSES.

THE changes at a distance from the site of irritation when this is about the organ of hearing are of great interest, though of doubtful interpretation. Schmiegelow has given renewed attention to them, and rightly points out some fallacies which Urbantschitsch seems to have overlooked, more especially in connexion with the alleged diminution of the acuity of vision on the same side of the body as the aural disease. Even in 1838 Delau recorded two cases of suppurative inflammation of the tympanic cavity, in which the sight of the corresponding eye was lessened whilst the ear was diseased, but improved as the ear got better. The phenomenon is not due to propagation of the inflammation to the retina, for the optic disc presented no pathological change. Schmiegelow doubts the accuracy of Urbantschitsch's observations, in which too much importance was attached to insignificant ameliorations of sight, and enough account was not made of the size of the pupils and of variations in refraction. Another unsettled question is the alleged reciprocity between the two ears, of such a kind that a loss of hearing on one side appears to give rise to a slight diminution of auditory powers on the other side. Besides various forms of neuralgia and the well-known vertigo, many mental symptoms, and even forced movements, have been ascribed to affections of the middle ear, but it is not improbable that damage to the more elaborated structure of the labyrinth may be operative in the production of some of these symptoms.

"SUSPICIOUS" DISEASE IN SPAIN.

THE only fresh explanation that appears to be forthcoming as to the cause of the outbreak to which we referred in our issue of the 6th inst. is a communication to a medical journal from a practitioner, who says that a member of his family who had been drinking goat's milk, having colic, he tested the goat's milk and found traces of corrosive sublimate in it, a circumstance which he believes is due to shepherds using a wash of this substance for their flocks for the purpose of destroying the larvæ of a fly which deposits its eggs in the cracks of goats' teats. The same correspondent remarks that he found corrosive sublimate in some cheese which had been sent to him from Seville a short time before, and which had produced "colic" in four persons who had partaken of it. The shepherds, whom he says he has often seen in his youthful days applying what they call *soliman* to the animals' teats, have no idea of the poisonous nature of the substance. The fly deposits its eggs in the summer only, and that is why these suspicious "colics" occur to those who partake of goat's milk and fresh cheese in the hot weather only. Some "suspicious cases" have been reported at Torrijos and Alhama, those in the latter locality having been diagnosed as sporadic cholera.

INFECTIOUS DISEASE IN LONDON.

SCARLET FEVER still continues to increase in London, as many as 217 cases having been admitted into the hospitals of the Metropolitan Asylums Board during the fortnight ending Friday last, leaving on that day 640 cases under treatment. The patients appear to have been received from all parts of the metropolis, Hampstead excepted. In this district the North-Western Hospital has been opened for the reception of persons suffering from scarlet fever, and ten cases had been admitted during the fortnight, leaving twenty-three under treatment in this institution. Of other fevers, there were but sixty-six cases remaining in the hospitals of the managers, of which fifty-six were of enteric fever and one of typhus. London still remains free from small-pox, but one patient suffering from this disease having been admitted during this period. Application has been made for the admission of a patient suffering from "cholera," but the Asylums Board were compelled to refuse the case, for the reason that no arrangements had been made for the reception of such cases, or could be made without the sanction of the Local Government Board.

THE ART OF BATHING.

THE bathing season of this year has thus far proved not less, perhaps more, fruitful of fatalities than usual, and visitors to the seaside cannot be too earnestly cautioned to avail themselves of all the local knowledge that is to be had before committing themselves to the movements of the tide upon what may be treacherous stretches of coast. Many a good swimmer has already this season found cause to regret the very proficiency which made him heedless of such an obvious peril as the outflowing of the tide. In most watering-places, however, there is no difficulty in getting ample security in this respect. Sea-bathing is an exercise for which more or less complete provision is made, after a fashion, at all the favourite resorts along our coast. That fashion, however, leaves very much to be desired. The familiar bathing machine is commonly a screen, and nothing more. The floor and seats will probably assume in use such an angle to the horizontal as makes it impossible either to sit or stand with comfort. The wooden roof shuts out the sunshine, depriving the bather of both light and heat. The cramped space affords no sufficient room even for the mere use of towels, and puts everything in the nature of athletic or calisthenic exercise wholly out of the question. The confined air, instantly saturated with moisture, throws the whole duty of drying the damp surface of the body upon a pair of clammy towels. The oozy floor keeps the feet wet and cold; while, finally, the isolation of this dismal cell converts what ought to be the most enjoyable part of the bathing operation into a brief term of solitary confinement. Such are some of the defects in our appliances. It cannot be surprising if, associated with these crude contrivances, there are some very faulty methods. Perhaps there is no error more common than that of over-long immersion. The error is, indeed, a most natural one. The bather has probably waited an hour to secure a "machine." He has the assured prospect of spending a most unhappy half-hour in it when the immersion is over, and it seems a very incommensurate advantage to be paddling about in the water for five minutes. Yet for the great majority of bathers five minutes' immersion is quite long enough. Especially is this so with a bather who does not swim. In his case immersion means partial

immersion only. He stands with shoulders, chest, and back exposed to the air, and offering a large evaporating surface from which heat is abstracted much more rapidly than from the submerged area, and by conduction through the insolated surface water of the sea. If to this be added the important fact that such a position is usually a very unaccustomed one to such a bather, we have a set of conditions in which it is plain that great circumspection should be used and the strictest moderation of indulgence must be prescribed. The swimmer even, whose familiarity with the water indicates, among other things, that he has had many opportunities of judging how long immersion suits his constitution, very commonly errs by exceeding the fifteen or twenty minutes which a wise discretion would prescribe.

FREDERICQ ON THE RESPIRATORY MOVEMENTS.

M. FREDERICQ, Professor of Physiology in the University of Liège, has communicated to the Belgian Academy of Sciences some interesting experiments he has just made on the regulation of the movements of respiration. He took two large rabbits, and, having anæsthetised them, cut the right carotids and connected the cardiac extremity in each with the cephalic extremity of the other rabbit by means of tubes filled with a 0·6 per cent. solution of chloride of sodium. He then tied the left carotids and the two vertebral arteries in both, the head of each rabbit being thus supplied exclusively with blood from the left ventricle of the other. He then attempted to cause dyspnœa in one of the animals by obstructing the trachea, and by administering air highly charged with carbonic acid. Difficulty in breathing, showing itself by deep and rapid respirations tending to pass into convulsions, was produced as under similar conditions in ordinary circumstances, but not on the rabbit subjected to the treatment. In that animal the respirations went on as before, while the symptoms of dyspnœa were confined to the other animal. The respiratory centre in the medulla of the rabbit whose trachea was compressed, being supplied with fully arterialised blood from the other rabbit's heart, entirely ignored the venous condition of the blood in the major part of its own arterial system; while the respiratory centre of the rabbit whose respiration was unobstructed, being supplied with highly carbonised blood, and being stimulated to abnormal activity thereby, immediately communicated exaggerated movements to the respiratory functions under its control.

THE DEGENERATION OF THE TEETH.

AN article recently published in an evening contemporary very properly criticises the theory started in an American dental journal that vegetarian diet would, if universally adopted, produce an edentulous condition of the jaws in the course of a few generations, utterly regardless of the fact that vegetarian races have magnificent teeth. The pathology of this condition is stated to be *disuse* and consequent atrophy of muscles and jaws, then degeneration, and ultimately suppression of the teeth entirely. That comparatively little employment of teeth has something to do with their degeneration in civilised nations admits of no doubt; but how many thousand years must it take to make man edentulous when there are so few evidences of a tendency in that direction. The wisdom teeth are said to be disappearing because they are so often ill-developed and frequently never erupted, and the same remark may sometimes be applied to the upper lateral incisors; but many Egyptian mummies and Etruscan skulls two thousand years of age exhibit the same conditions, yet there is no race of man edentulous. "Are the teeth of the present century worse than those of the last?" is a question by no means easily answered, for we have only general observations and no statistics to go by. Dental surgery is a modern art, and too much separated from its parents—medicine and surgery—to satisfactorily decide the question. Moreover, dentists only see those people who have defective teeth. Again, much more importance is attached to teeth than in former days, and they consequently receive more attention. It has often been pointed out that the vast improvements in medical and surgical treatment serve to keep alive a large number of weaklings who would otherwise have died, and these often have a progeny of similar frailty, whose teeth we may legitimately conclude partake of the general infirmity. On the other hand, dental disease, if early treated, as is now done, may be to a great extent stamped out. Of course, the teeth of civilised nations are worse than those of savages, although, as has been remarked in our columns, those of the latter are by no means free from disease.

RUPTURE OF THE PERINEUM: GIBSON AND WIFE v. JEFFRIES AND HILLS.

THIS case was tried at the Guildford Assizes, before Mr. Justice Cave, on July 21st, in which damages were sought to be recovered for alleged negligence and unskilfulness on the part of the defendants, in the treatment of the plaintiff's wife in her confinement. In the treatment the use of the forceps was required, and, the patient being a primipara, the employment of the instrument resulted, it appeared, in the rupture of the perineum. The rupture extended into the rectum. The verdict was for the defendants, but the jury were of opinion that there was not sufficient medical supervision over the nurse in the after treatment. The trial was a fair one, and the judge's summing up was very discriminating. But it is a pity that the action was ever commenced. Several medical witnesses testified that they had repeatedly got valuable and patient assistance from Mr. Hills in bad midwifery cases, and Dr. Graily Hewitt—who was requested to examine the patient and report on her by Mr. Chapman, who took charge of the case a few days after delivery,—after careful examination of the facts and of the case, expressed the opinion that there was no evidence to sustain a charge of malpractice. He said that perineal rupture sometimes happened in the most skilful hands. One point on which Dr. Hewitt's opinion was asked was whether the hand of an assistant would have saved the perineum; he replied that it would not. He said the avoidance of laceration depended for the most part on the skilful manipulation of the forceps. In regard to guarding the perineum, we are of opinion that, whenever practicable, a second surgeon should be retained to make this object his special care. But such actions as the one referred to are unreasonable. Those who are most experienced in midwifery will most mercifully judge accidents of the kind which occurred in the above case.

CARELESS LABELLING OF BOTTLES.

AT the Lewes Assizes last week, before Mr. Justice Grove and a special jury, an action was brought against a well-known firm of pharmaceutical chemists for carelessness in labelling two bottles, one containing blistering fluid for application behind the ears, the other a collyrium. The medicines were rightly made up, but the labels were put on wrongly. This was explained by the statement that the "finisher"—the person who labels the bottles—made the mistake. The defendants, without acknowledging liability, had paid £50 into court. Mr. Critchett gave evidence that the patient was suffering now from gouty inflammation of the eye, and that the accident had done her no substantial harm. The jury awarded the plaintiff £62 damages, being £12 in addition to the £50 paid into court. The judge took occasion to express his regret that directions in pre-

scriptions were not written in English, and gave a striking instance from his personal experience in which a mistake was made by the dispenser that might have been fatal but for the patient's knowledge of Latin. There is much to be said for this, though it is not very relevant to the case, where the labels were rightly written but placed on the wrong bottles. It seems more to the purpose to insist that the person who makes up the medicines shall affix the labels.

GLASGOW ROYAL INFIRMARY AND THE UNIVERSITY.

A DEPUTATION, representing the directors of the Glasgow Royal Infirmary and the Merchants' House, had an interview with the Secretary for Scotland on the 9th inst., to urge that in the Scotch Universities Bill provision should be made for erecting the medical school in connexion with the Glasgow Royal Infirmary into a college of Glasgow University, in the same way as the College of Dundee was proposed to be affiliated to the University of St. Andrews. The deputation having explained their views, the Marquis of Lothian said that from the fact of a provision of that nature having been in the Bill which was previously brought before Parliament, although not passed, and it having been thought desirable to eliminate it, he should like to have an opportunity of reconsidering the matter in all its bearings. He assured them that the representations of the deputation would have his best consideration. There was, he thought, very little chance of the Bill passing this session, and there would thus be plenty of time to consider the matter.

LIFE-SAVING AT SEA.

THE very short report which has been presented by the Select Committee appointed by the House of Commons "to inquire into the existing laws and regulations" regarding boats, life-buoys, and other life-saving gear, contains many suggestions of such obvious value that one can only feel surprise that they have not been adopted long ago. For instance, "your committee consider that in ships carrying passengers all seats, chairs, stools, lockers, and other movable articles on the deck of such vessels, suitable for flotation, should be sufficiently buoyant to be capable of supporting one or more persons in an emergency." This seems to be the very A B C of prudence, but it probably will never make due impression upon the builders and furnishers of ships until it has been imposed upon them as a regulation by the Board of Trade. It does not appear, however, that the Legislature is itself free altogether from the charge of having overlooked some most obvious considerations when prescribing the kind and quantity of life-saving apparatus which a ship shall carry. Thus the committee remark:—

"With reference to boats, the evidence points out the necessity for having new regulations affecting them. The existing law does not compel any passenger ship over 1500 tons to carry more than seven boats, while in cargo vessels the boats are often considerably over the number which could possibly be useful to the crew on an emergency. Your committee think that boats of all vessels of over 100 tons' register, should be inspected at certain stated intervals, be lowered into the water and examined as to whether they are watertight, and whether the falls, davits, and all gear connected with the boats are in a thoroughly trustworthy and efficient condition. Your committee find that many passenger ships could not, without great inconvenience, carry so many of the ordinary wooden boats as would suffice to carry the whole of the passengers and crew with safety in bad weather. Under such circumstances the crew would not be sufficient to man so many boats; nor could they all be got into the water in sufficient time in the event of very rapid foundering. Having regard, however, to the fact that accidents occur probably as often in moderate weather as in bad, and having regard also to the fact that the very cause of the accident frequently incapacitates many of the boats, and to the further fact that an insufficiency of boats undoubtedly tends to cause panic, we are of opinion that all sea-going passenger ships should be compelled by law to carry such boats, and other life-saving apparatus, as would in the aggregate best provide for the safety of all on board in moderate weather."

Valuable as these suggestions are, we think that the suggestion with which the report concludes is more valuable still. The committee recommend the appointment of a permanent committee on which all the parties interested in navigation would be represented to keep this whole subject under observation, and frame rules from time to time. Only thus will it be possible to take advantage of the latest developments of science which, by its steady advance, is constantly rendering antiquated the unrevised regulations which represent the wisdom and knowledge of an earlier decade.

POOR-LAW MEDICAL ASSOCIATION.

WE regret to have to announce that Mr. John Wickham Barnes, who has been for some years the active and indefatigable secretary of the Poor-law Medical Officers' Association, and who has been somewhat out of health of late, has had a severe attack of choleraic diarrhœa, which almost assumed an Asiatic type. It would appear that he was taken suddenly ill at Wimborne, whither he had gone on business. He is now convalescent and on a fair way to recovery. We are pleased to be able to announce that Dr. Joseph Rogers, who has been staying for some weeks at Herne Bay, has so much benefited by his visit there that there is every probability, in the opinion of his medical advisers, that he will be enabled to resume his work in the interests of the Poor-law Medical Service, which has been in abeyance for some months past.

KAKKE OR BERI-BERI.

THE etiology of this strange affection being confessedly obscure, all attempts to throw light upon it should be well considered. There is no need to refer to the articles on Japanese kakké which have so recently appeared in our columns, further than to remark that the cause of the disease appears to exist in water or food, and can affect human beings and some animals by being swallowed. A Dutch physician from Atchin reports in the *Weekblad van het Nederlandsch Tijdschrift voor Geneeskunde* of June 18th that an epidemic occurred about a month after the ground in a certain locality had been flooded, and that after antiseptic measures had been taken and the neighbourhood well disinfected the disease was arrested. This, he suggests, points to the existence in the ground of the cause of the disease, the incubation stage of beri-beri being, as he says, long—probably about four weeks. No attention seems to have been directed by oriental observers to the very interesting observations of Dr. Lacerda of Rio de Janeiro, who in 1885 published a pamphlet, which is now before us, entitled "Peste de Cadeiras, ou Epizootia de Marajó; suas Analogias com o Beri-beri" (Hip Epidemic, or Marajó Epizootic; its Analogies with Beri-beri), in which he gives an account of a fatal disease affecting horses and swine in the island of Marajó, which appeared to be due to a polymorphous microphyte belonging to the Ascomycetes, which abounded in the water of Lake Arary in the island. This microphyte was found to produce the disease in a number of animals, rabbits, pigs, birds, monkeys, &c., inoculated with it. The symptoms and the lesions found in the spinal cord after death corresponded very closely, in Dr. Lacerda's opinion, with those due to beri-beri, and he came to the

conclusion that the Marajó epizootic was identical with that disease. If so, his researches throw considerable light on its etiology, and are certainly well worth the study of those interested in the subject. The pamphlet, which is in Portuguese, has not, so far as we are aware, been translated. It contains, however, several drawings, which are easily understood. A short notice of the work appeared in THE LANCET of Feb. 13th, 1886.

PRECAUTIONS AGAINST DIARRHŒA AND CHOLERA.

IN view of the special dangers from diarhœa and allied diseases at this time of the year, Dr. Tatham, medical officer of health for Salford, has issued a series of instructions for the guidance of the inhabitants of his district. The memorandum embodying them lays down the principle that these diseases are intimately associated with conditions of filth which favour their propagation, and then it proceeds to explain what are the special duties of householders in the removal of all conditions which favour diarrhœal affections, and what steps have been organised by the sanitary authority so as to facilitate cleanliness in and about households. The importance of the early control of symptoms of diarrhœa are referred to, and it is announced that free distribution of diarrhœa mixtures will be given, under proper control, should the occasion arise. Much that is contained in this memorandum deserves the attention of sanitary authorities generally.

PROGRESSIVE SPASTIC ATAXIA.

THE multiplication of names for one and the same disease of the spinal cord or any other organ of the body is not desirable in itself, nor do we think it tends to improve our knowledge of any disease. "Ataxic parsplegia," described last year in THE LANCET by Dr. Gowers, is another name for the affection termed spastic ataxia in a paper in the July number of the *Medical Record* by Dr. Dana. From the latter's point of view the use of some word indicating spasm would seem to be necessary, for he believes that marked weakness of the legs is not common in the disease in question. We do not subscribe to this opinion, for our experience is that constant spasm of legs never exists without considerable impairment of volitional power over them. Dr. Dana's paper is illustrated by coloured diagrams showing the distribution of the combined sclerosis of the lateral and posterior columns.

NEW VOLTAIC COMBINATIONS.

DR. C. R. ALDER WRIGHT, F.R.S., and Mr. C. Thompson, both of St. Mary's Hospital Medical School, have contributed to the Chemical Society some preliminary experiments on batteries, in which the electro-positive metal zinc is replaced by solutions capable of oxidation. The ordinary porous cell arrangement is used, and similar plates of carbon or platinum. The plate of lower potential—that is, the electro-positive plate or the plate replacing zinc—is immersed in the reducing, and the other plate in the oxidising, solution. Steady currents are thereby produced, the energy of which will shortly be determined. Among the couples which have already been tried are the following. In each case we place the electro-positive first. 1. Sulphurous acid against chromic liquor (potassium dichromate and sulphuric acid), sulphuric acid and chromic sulphate being formed. 2. Sodium sulphite against alkaline potassium permanganate. Here sodium sulphate and hydrated manganese dioxide are formed. 3. Chromic hydrate dissolved in caustic soda against chromic liquor. Here sodium chromate is formed in one cell and chromic sulphate in the other. This is a particularly interesting reaction, as the chromium in one cell is oxidised, while that in the other is reduced. By intermediate treatment the action of the cells might be made reversible. 4. Solution of potassium ferrocyanide opposed to chromic liquor. The ferrocyanide becomes ferricyanide according to the following equation: $6K_4FeCy_6+2CrO_3+6H_2SO_4=6K_3FeCy_6+3K_2SO_4+6H_2O+Cr_2(SO_4)_3$. 5. Solution of lead oxide in caustic soda against alkaline permanganate, hypochlorite or hypobromite. Here the lead monoxide becomes peroxide, which deposits in a solid form. It is evident that an almost infinite number of such combinations are possible, and we shall await with great interest the determination of their electromotive force.

TRAUMATIC TETANUS TREATED BY CHLORAL AND BROMIDE.

DR. MAYER relates, in the *Allgemeine Medicinische Central Zeitung*, a very pronounced case of traumatic tetanus, which he treated successfully by fifteen-grain doses of chloral hydrate and bromide of potassium, given alternately every hour for fourteen days. By that time the opisthotonos had ceased, but some rigidity of the muscles of the chin still remained. The chloral was then discontinued, the bromide being given as before for a month longer. The patient was then cured, but was too weak to resume his employment till six months later.

THE INTERNATIONAL CONGRESS ON CREMATION.

FROM Milan a correspondent writes:—The Congress, at which cremation, in its many-sided aspects, was to have been discussed here in September, has been postponed till April, 1888, in compliance with representations addressed to the organising committee by physicians and hygienists, whose presence at next month's Medical and Sanitary Congresses both in Europe and America would have made attendance at its sittings impossible.

THE RESPIRATION IN PARALYTIC RABIES.

AN account of some careful observations on the respiratory rhythm of rabbits suffering from artificially induced rabies is given by Dr. Ferré in the *Journal de Médecine de Bordeaux*, No. 1 (Aug. 6th). The graphic tracings show very clearly the gradual change in type of the respiratory rhythm, which is normally composed of short rapid waves, as seen in the tracing; the respirations become slower and deeper, so that just before death they are six times less frequent than during health. Ferré proves that the first phenomenon of rabic infection is a distinct slowing of the respiration.

TYPHOID FEVER AT MOUNTAIN ASH.

A SEVERE epidemic of typhoid fever is prevailing at Mountain Ash, upwards of 100 cases having already occurred. Unfortunately the actual cause of the outbreak has not yet been clearly determined, although it is believed to be associated with the excessive drought which has prevailed.

DEATHS OF EMINENT FOREIGN MEDICAL AND SCIENTIFIC MEN.

THE deaths of the following foreign medical and scientific men are announced:—Dr. Arâmyi von Hunyadvur, Emeritás Professor of Pathological Anatomy in Pesth, at the age of 78.—Dr. Sheremetevski, of Moscow, librarian of the Russian Medical Society.

IT is gratifying to be able to announce the conspicuous success of the candidature of George Thomson, M.D., C.M. Aber., for the Coronership of the borough of Oldham. There were ten applicants for the post, seven of them belonging to the legal profession.

THE *London Gazette* of the 12th inst. contains a letter from Captain Woodford, R.N., to the Secretary of the Admiralty in reference to the capture of an Arab dhow and fifty-three slaves by Lieutenant F. F. Fegen at Pemba on May 30th, in which the following passage occurs:—"Surgeon W. H. Norman, of H.M.S. *Reindeer*, deserves great credit for skilful surgery under trying circumstances."

THE Balfour Studentship in the University of Cambridge for original biological inquiry will be vacant in October. The value of the studentship, which is tenable for three years, is £200, and the person elected need not be a member of the University, nor is the award made after a competitive examination.

ON the 12th inst. the Queen conferred the honour of Knighthood upon, amongst others, Mr. George Macleod (Surgeon-in-Ordinary in Scotland) and Dr. William Aitken (Professor of Pathology at Netley Hospital). In the previous week a similar honour was conferred upon Dr. Alfred Baring Garrod.

GREAT excitement was caused in Berlin on Saturday, the 13th inst., by the announcement that Professor Virchow had been rejected as candidate for the post of Rector of Berlin University owing to his Liberal political opinions.

DR. POTAIN was summoned in consultation to M. Katkoff, who resided at Snamenskojè, near Moscow, remaining with the great journalist two days. His fee was 20,000 francs (£800).

M. DASTRE, Docteur ès Sciences, Paris, has been appointed Professor of Physiology in the Faculty of Science.

VON PETTENKOFER'S LATEST VIEWS ON CHOLERA.

(*Concluded from page 340.*)

THE impunity with which the ticket-of-leave men before mentioned were transported to other localities justifies von Pettenkofer in the conclusion that, during war, detachments of troops and prisoners can quite safely be sent from a cholera-stricken region to one yet unvisited by the malady, always with the proviso that, like the above-mentioned ticket-of-leave men, the troops and prisoners have been thoroughly cleansed, with all the articles they take with them. In proof of this he appeals to the history of the Franco-German war (1870-71), when, indeed, cholera did not prevail, but when abdominal typhus and dysentery were rife—maladies which have a strong family likeness to cholera in their mode of diffusion and in their dependence on conditions of place and season. The sixth volume of the medico-military report of that campaign warrants Dr. Port in saying that of "the 74,000 typhus and 39,000 dysenteric cases occurring in the German army from the middle of July, 1870, to the end of June, 1871, great masses were continually sent back to the frontier *en route* to all parts of Germany, but that the result was favourable beyond all precedent. Spread of the maladies among the civil population of the Fatherland there was none—a fact which stands in the sharpest contrast to the experience of small-pox in the same year, and to that of spotted typhus in previous campaigns."

In the eighth section, von Pettenkofer enters into the practical question as to the prohibition or permission of fairs and other periodical assemblies of great masses of people during cholera time; and adduces striking evidence from the experience of Nürnberg in 1854 and Leipsig in 1866 in support of his doctrine that "such assemblies in places where cholera is already epidemic are always to be postponed—not, indeed, in the interest of the residents, but only in the interest of the arrivals from elsewhere who may be infected in cholera localities; so long, however, as a place is not epidemically attacked, or has no reason to apprehend, during the time when the popular gathering takes place, that it may be attacked, the people may unreservedly be allowed to meet."

In the ninth section he treats of restriction of communication during cholera time, in the case of barracks and schools. Much, he thinks, "cannot be done in this direction, the question mainly turning on this: "whether or not the barrack or the schoolhouse is a focus of infection. Schools are, so far, of less importance, as residence in them is of short duration, and the schoolboy age is, besides, least liable to choleraic attack. Barracks may be managed, according to their situation, in very different ways, some being exempt from the infection," others being preserves of it, and accordingly to be regarded and treated essentially, as are other houses in the locality. Recruits have more to suffer, as a rule, than their older comrades, and it should therefore be recommended during an epidemic not to call them in, except to barracks which are proved to be cholera-exempt.

As to the circulation of the cholera-dead in funerals and other modes of removal, von Pettenkofer, under Section 10, maintains that the bodies of the deceased from cholera are just as little infectious as the living cholera patient, and restricts himself to a few precautions of special import in cholera localities. The surveillance of the rag trade in cholera time, which the contagionist school lays particular stress upon, he holds to be of little importance, and gives his reason for the same partially under Section 11, but more fully in the final section. Section 12 deals with the subject of cholera linen and other articles coming from cholera localities. In this case von Pettenkofer admits a certain utility in disinfection, according to the bacteriological principles of Koch and Wolffhügel, though he places much smaller value on it than is usually done. Disinfection of dwelling-houses calls for a very simple procedure in his view; but to this, as to all restrictions of communication, isolation of the sick, and disinfection of their evacuations, he attaches very slight importance. He says: "That it does no harm if we neglect all these measures, but act in quite the contrary manner, is strikingly proved in the epidemic which in 1836 prevailed over all Bavaria. The Government had the boldness officially to assure its four million subjects that cholera is not in the slightest degree a contagious disease, but develops itself only from the *genius epidemicus* inhering in localities, in some to a greater, in others to a lesser degree; in some earlier as to time, in others later; that from cholera patients infection never proceeds, and that they may be nursed without fear; that even the cholera stools are quite innocuous—so much so, in fact, that many physicians have not only smelt them, but have even gone so far as to taste them. That during the prevalence of the epidemic in the capital (Munich) more than 40,000 persons had migrated to neighbouring localities, and the disease had thereafter shown itself only in extremely isolated cases. Notwithstanding this manifesto, the cholera epidemic, treated for the first time on anti-contagionist principles, proved the mildest of all that ever visited Munich. According to the contagionist view, this ought to have been the gravest, attacking as it did a population (epidemiologically speaking) quite unseasoned; while every precaution of isolation and of disinfection was neglected, and communication unrestricted throughout the whole country. In spite of this (on contagionist principles) negation of all prudential measures—a line of conduct authoritatively inculcated by the Government on the then small number of contagionistically-minded physicians—cholera, among the four million inhabitants of the kingdom, diffused itself scarcely at all! That was indeed a high-handed epidemiological experiment on the part of the Bavarian Government; an anti-contagionist experiment to boot. It may be said, with human beings you ought to make no experiments involving danger to life or even to health (however much you may vivisect the lower animals). But, as in the case of epidemics, you cannot help doing something, so that which you actually do is called not an experiment, but a 'regulation' to which human beings must conform, just as much as the lower animals are subjected to the conditons imposed by the experimenter. If this great epidemiological experiment practised by the Bavarian Government in 1836 on its four million subjects on anti-contagionist principles had, with the same beneficial results, been made on the

principles of the contagionist school, that school would have peremptorily required that its principles should be recognised as the sound ones, just as if the experiment had been practised on four million mice or guinea-pigs. But as this experiment succeeded when applied to men on anti-contagionist principles, it is held to prove nothing at all!"

In his thirteenth section, von Pettenkofer considers the measures to be adopted against individual predisposition to cholera and the specific medical treatment. He takes his stand essentially on the manifesto issued by the Bavarian Minister of the Interior on Aug. 6th, 1883, and insists on the provision that "the organisation of medical establishments for the examination of cholera cases, real or suspected, and the inspection of diarrhœas in single districts (house-to-house scrutiny), for the first time practised in Munich in 1836, should be systematically proceeded with"—measures which worked so beneficially "that of 5157 cases in which they were enforced only 1264 reached the asphyxial stage, and only 553 died." Again, "among the cases of completely developed cholera about two-thirds (66 per cent.) were officially proved to have neglected the premonitory diarrhœa and to have kept out of the way of prophylactic treatment."

In the fourteenth and last section, von Pettenkofer endeavours to show how, on his theory that cholera, epidemiologically considered, depends on conditions of place and of time, the disease may best be combated at its source. You cannot, he grants to the contagionist, alter the essential character of the soil or introduce different climatic conditions in a cholera locality; but, taking the place as you find it, you may effect changes on it which destroy its power of harbouring and developing the cholera germ. He then gives in considerable detail the sanitary operations which have made Fort William, near Calcutta, and Haidhausen in Bavaria, from being foci of cholera, well nigh cholera-proof. The levelling and draining of the soil, the immediate and effective removal from it of all refuse (animal and vegetable), its constant purification internally as well as superficially, were in both cases followed, not only by the practical disappearances of cholera when the malady continued to infect other localities in their neighbourhood not subjected to the same sanitary treatment, but also by the disappearance, in Haidhausen particularly, of contagious diseases of other and hardly less deadly kinds. These measures, carried out coincidently with the proper management of the person on the part of each individual member of the community, are, in von Pettenkofer's view, the one sound and infallible prophylactic against cholera, and supersede the necessity of the elaborate, costly, and vexatious restrictions imposed on society by the contagionist school.

The brief indication of his doctrine which we have given will have fully served its purpose if it sends the reader to the papers themselves from which it has been extracted and condensed—papers which have evoked immense interest in sanitary circles on the Continent, and which in a popularised form are being worked down for the practical instruction of the lay public.

LUNACY IN SCOTLAND.

THE report just issued by the Scotch Lunacy Commissioners, while representing actually a very favourable condition of things, is hardly so promising for the future as that which the English Commissioners were recently able to put forth. The most salient and happiest feature of the English report was that the proportion of lunatics to the general population has fallen slightly within the past two years. The same thing cannot be said of lunacy in Scotland. The proportion (279 per 100,000) which appears in this report is exactly equal to that of last year, and greater than that of any previous year in the Commissioners' review. One consideration does indeed afford satisfaction. Though the percentage of it does not show the same tendency as the English percentage towards diminution, it is at least actually less by a minute fraction; less, that is, in the proportion of 279 to 286. The Commissioners adopt the explanation that the increasing proportion of lunatics under their cognisance "does not necessarily indicate any increasing amount of mental disease, and that it is probably due in a large measure to what is only an increasing readiness to place persons more or less disordered in mind as lunatics in establishments.

As to treatment, the present report may be regarded as upon the whole very satisfactory. The highly important point of finding suitable occupation for the insane receives due attention, and although this aspect of the year's experience is not exhibited statistically with quite as much fulness as we could wish, there are one or two references to it in the report of a highly instructive and eminently satisfactory character. We have already remarked, in reviewing the English report, upon the special difficulty which arises from the unwise susceptibilities of relatives in the case of private patients. The great advantage of giving to the medical man an entirely free hand in this respect is incidentally, and because incidentally the more strikingly, illustrated by the Commissioners' report upon the Lunatic Department of the General Prison at Perth. "This establishment," say the Commissioners, "is reported to be in excellent order. The new kitchen and laundry are in operation, and are found to be of great advantage in affording active and useful occupation for the women. The men are largely employed in gardening and other outdoor work. To the industrial occupation of the patients and other rational modes of treatment may fairly be attributed the fact that the reports record no accident, no escape, and no necessity for the use of mechanical restraint."

Another point of treatment to which this report directs especial attention is that of boarding out. Treatment in the ordinary sense of the word there is none in these cases. The lunatic is placed with some family for custody merely, and only when he is not only harmless, but also incurable, in the judgment of his medical advisers. Were it considered possible for treatment to avail anything, he would, of course, be sent to an asylum where skilled advice and the best appliances would be available. Yet, in spite of this very unfavourable prognosis, there is a record of over forty recoveries among about 2300 such patients. Upon this very striking fact Dr. Fraser makes the noteworthy comment: "Some recoveries, however, do take place, partly because the opinion as to their incurability is occasionally wrong, and partly, as I believe, because the condition of some patients, which would be an incurable one if they were left in asylums, becomes a curable condition under the circumstances which attend life in a private dwelling." We quite agree that, if this opinion is correct, it ought to have an important practical influence on the treatment of the insane, and we shall look with interest for any light which future reports, both of the Scotch and of the English Commissioners, may throw upon this interesting question.

THE VOLUNTEER MEDICAL ASSOCIATION.

WE are glad to be able to record that a serious effort is now being made to thoroughly organise the Volunteer Medical Service of the country under the above title. Some such organisation has long been wanted, and the promoters are to be heartily congratulated upon the success which has attended their efforts. A letter, giving information of the objects of the Association, has been sent to every Volunteer medical officer, the number of whom very nearly approaches 1000. The Association is to be congratulated upon its list of officers and council. We notice the Prince of Wales has given another proof of his interest in the Volunteer movement and ambulance work by accepting the office of president; and amongst the vice-presidents are Sir Andrew Clark, Sir W. Guyer Hunter, Sir James Paget, Sir James Hanbury, Sir William Mac Cormac, Sir William Turner, Sir Douglas Maclagan, Mr. Savory, and Sir Joseph Fayrer. The Council is a thoroughly representative one of the Volunteer Medical Service in every part of the country, and provision is made in the rules for general meetings of the members. The Volunteer Ambulance Department has amalgamated with the Volunteer Medical Association, handing over to its funds a considerable sum of money and valuable material, so that this work will now be carried on under the auspices of the Association. For some time past great dissatisfaction has been felt at the very anomalous position of Volunteer medical officers, the majority of such officers holding the non-commissioned rank of acting-surgeon, and therefore occupying a position inferior to the youngest sub-lieutenant in the service. We are glad to note that in consequence of representations from the Council of the Volunteer Medical

Association, these anomalies are to be removed, as will be seen by the reply of the War Secretary to the question put by Sir Guyer Hunter, chairman of the Council of the Association, in the House of Commons. Volunteer medical officers generally, and acting-surgeons in particular, are much indebted to the Council for the interest they have evinced, and we cordially recommend every Volunteer medical officer to join the Association, the offices of which are at 26, King-William-street, Strand.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN twenty-eight of the largest English towns 5844 births and 4191 deaths were registered during the week ending August 13th. The annual rate of mortality in these towns, which had been 23·2 and 22·9 per 1000 in the preceding two weeks, rose again last week to 23·7. During the first six weeks of the current quarter the death-rate in these towns averaged 22·1 per 1000, and was 1·0 above the mean rate in the corresponding periods of the ten years 1877-86. The lowest rates in these towns last week were 13·2 in Halifax, 15·1 in Huddersfield, 16·3 in Brighton, and 17·2 in Derby. The rates in the other towns ranged upwards to 29·5 in Blackburn, 30·1 in Preston, 30·2 in Newcastle-upon-Tyne, and 31·4 in Manchester. The deaths referred to the principal zymotic diseases in the twenty-eight towns, which had been 1301 and 1292 in the preceding two weeks, further declined last week to 1252; they included 943 from diarrhœa, 104 from whooping-cough, 78 from measles, 57 from scarlet fever, 39 from "fever" (principally enteric), 29 from diphtheria, and 2 from small-pox. These zymotic diseases caused the lowest death-rates last week in Halifax and Huddersfield, and the highest in Birminghom, Salford, Hull, Portsmouth, and Preston. Diarrhœa caused the greatest mortality in Salford, Birmingham, Hull, Leicester, Portsmouth, and Preston; whooping-cough in Sheffield and Birmingham; measles in Newcastle-upon-Tyne, Bolton, Salford, and Manchester; scarlet fever in Birkenhead, Bristol, and Blackburn; and "fever" in Birkenhead. Of the 29 deaths from diphtheria in the twenty-eight towns, 21 occurred in London. Small-pox caused 1 death in Sheffield, 1 in Cardiff, but not one in Greater London, or in any of the twenty-five other large provincial towns. Only 2 cases of small-pox were under treatment on Saturday last in the metropolitan asylum hospitals receiving cases of this disease, of which one was admitted during the week. The deaths referred to diseases of the respiratory organs in London, which had declined in the preceding six weeks from 199 to 158, further fell last week to 175, and were 7 below the corrected average. The causes of 66, or 1·6 per cent., of the deaths in the twenty-eight towns last week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Plymouth, Wolverhampton, Leicester, Nottingham, and in five other smaller towns. The largest proportions of uncertified deaths were registered in Oldham, Sunderland, Brighton, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined from 20·9 to 17·1 per 1000 in the preceding three weeks, rose again to 19·3 in the week ending August 13th; this rate, however, was 4·4 per 1000 below the mean rate during the same week in the twenty-eight large English towns. The rates in the Scotch towns last week ranged from 13·0 and 14·5 in Perth and Paisley, to 24·0 in Dundee, and 26·7 in Greenock. The 482 deaths in the eight towns last week showed an increase of 54 upon the number in the preceding week, and included 37 which were referred to diarrhœa, 28 to whooping-cough, 9 to scarlet fever, 5 to diphtheria, 1 to measles, 1 to "fever" and not one to small-pox; in all, 81 deaths resulted from these principal zymotic diseases, against 103 and 73 in the preceding two weeks. These 81 deaths were equal to an annual rate of 3·2 per 1000, which was as much as 3·9 below the mean rate from the same diseases last week in the twenty-eight English towns. The fatal cases of diarrhœa, which had been 39 and 28 in the preceding two weeks, rose again last week to 37, of which 8 occurred in Glasgow, 8 in Dundee, 7 in Edinburgh, and 5 in Leith. The deaths referred to whooping-cough, which had been 41 and 22 in the previous two weeks, increased last week to 28, and included 8 in Glasgow, 8 in Greenock, 7 in Edinburgh, and 4 in Dundee. The 9 fatal cases of scarlet fever exceeded by 2 the number returned in the preceding week, and included 7 in Dundee. The 5 deaths from diphtheria were within one of the number recorded in the previous week; 3 occurred in Edinburgh. The fatal cases of measles and the death from 'fever" were recorded in Glasgow. The deaths referred to acute diseases of the respiratory organs in the eight towns, which had been 65 and 67 in the preceding two weeks, further rose last week to 71, and corresponded with the number returned in the same week of last year. The causes of 63, or more than 13 per cent., of the deaths registered in the eight towns during the week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been 30·9 and 29·6 per 1000 in the preceding two weeks, rose again to 31·5 in the week ending August 13th. During the first six weeks of the current quarter the death-rate in the city averaged 29·4 per 1000, the mean rate during the same period being but 22·7 in London and 19·1 in Edinburgh. The 213 deaths in Dublin last week showed an increase of 13 upon the number returned in the preceding week; they included 27 which were referred to measles, 23 to diarrhœa, 6 to whooping-cough, 2 to "fever" (typhus, enteric, or simple), and not one either to small-pox, scarlet fever, or diphtheria. Thus the deaths resulting from these principal zymotic diseases, which had increased in the preceding four weeks from 45 to 55, further rose last week to 58, and exceeded the number in any week since August, 1884; they were equal to an annual rate of 8·6 per 1000, the rates from the same diseases being 7·0 in London and 3·4 in Edinburgh. The fatal cases of measles, which had been 22 and 16 in the preceding two weeks, rose again last week to 27, and exceeded the number recorded in any recent week. The deaths referred to diarrhœa, which had been 16 and 29 in the previous weeks, declined to 23 last week. The 6 fatal cases of whooping-cough showed an increase of 3 upon the number in the preceding week, while the 2 deaths from fever corresponded with those recorded in the previous week. The deaths of infants and of elderly persons slightly exceeded those returned in the preceding week. Eight inquest cases and 3 deaths from violence were registered; and 52, or one-fourth, of the deaths occurred in public institutions. The causes of 33, or more than 15 per cent., of the deaths registered during the week were uncertified.

THE SERVICES.

Deputy Surgeon-General R. Webb has been appointed Principal Medical Officer, Dublin District.

A Greenwich Hospital Pension of £50 a year for Fleet Surgeons and Staff Surgeons is vacant by the death of Deputy Inspector-General James Vaughan.

INDIA OFFICE.—The Queen has approved of the retirement from the Service of the undermentioned officers of the Indian Military Forces:—Brigade Surgeon Charles Julian Joseph Jackson, M.D., of the Bengal Medical Establishment (dated March 31st, 1887), and Surgeon-Major Richd. Hamilton Batty, of the Bombay Medical Establishment (dated June 24th, 1887). The undermentioned officers have been granted a step of honorary rank on retirement:—Brigade Surgeon Charles Julian Joseph Jackson, M.D., of the Bengal Medical Establishment (dated March 31st, 1887), and Brigade Surgeon Henry Cayley, of the Bengal Medical Establishment (dated April 29th, 1887), to be Deputy Surgeons-General; an Surgeon-Major Richard Hamilton Batty, of the Bombay Medical Establishment (dated June 24th, 1887), to be Brigade Surgeon.

ADMIRALTY.—In accordance with the provisions of Her Majesty's Order in Council of April 1st, 1881, Fleet Surgeon Daniel O'Connor, M.D., has been placed on the retired list, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets (dated Aug. 14th, 1887).

The following appointments have been made:—Fleet Surgeon James Bradly, to the *Malabar;* Surgeon John N. Corbett, to the *Alecto;* and Surgeon John Fogerty, to the *Orwell.*

RIFLE VOLUNTEERS.—5th (Isle of Wight, Princess Beatrice's) Volunteer Battalion, the Hampshire Regiment: Acting Surgeon E. R. Woodford, M.D., resigns his appointment (dated Aug. 13th, 1887).

Correspondence.

"Audi alteram partem."

CATARACT OPERATION IN BRUSSELS.

To the Editors of THE LANCET.

SIRS,—Your annotation on cataract operations as practised by Dr. Coppez leads me to suppose that a brief *résumé* of the subject may not be unacceptable to your readers. Formerly the percentage of loss (fifteen actual, with twenty more or less damaged) from the old flap method of cataract extraction was so great that surgeons, as a rule, declined to operate until the patient was quite blind. On the other hand, iridectomies were constantly practised with scarcely any loss of eyes at all—at most not more than one in five hundred. These contrasted figures set Dr. Schafte, Professor von Graefe's assistant, thinking; and the result of his cogitations was a proposition to perform iridectomy in all cases of cataract, and then remove the lens through the small incision by means of a spoon—an operation which was for a time very generally adopted. It was clear, however, that a slight enlargement of Schafte's incision in the corneo-sclerotic junction would permit of the exit of the lens without the use of any traction instrument whatever, and Graefe's modified linear extraction followed as a matter of course—an operation which, varied by most of the surgeons who adopted it, but always accompanied by excision of the iris, was the method of extraction *par excellence* for twenty years. Despite its great popularity, however, there were numerous objections to von Graefe's method. The incision was too far back; the danger of prolapse of the vitreous was great; a large iridectomy was necessary in order to prevent strangulation of the iris at the angles of the wound; bleeding into the anterior chamber was frequent, and the site of the incision was such as to excite well-grounded fears of sympathetic ophthalmia; and yet surgeons were afraid to bring the incision more forward into true corneal tissue on account of the tendency of this non-vascular membrane to suppurate. This risk is now obviated by the use of antiseptics, and prolapse of the iris, formerly the bugbear of extraction, counteracted by eserine. I introduced some patients who had been operated on by the small corneal flap, with central and movable pupils, to the notice of the members of the Clinical Society of London in 1874, and have within the last three years operated upon 500 patients in the same way. Coppez's incision, which is not precisely the one I adopt, is depicted in the accompanying woodcut, which I extract from a review of his paper in the *Annales d'Oculistique* for June of the present year.

I am, Sirs, your obedient servant,

CHARLES BELL TAYLOR, M.D., F.R.C.S.Ed.,
Surgeon to the Nottingham and Midland
August, 1887. Eye Infirmary.

PATHOLOGY AND TREATMENT OF SEPTIC DISEASES.

To the Editors of THE LANCET.

SIRS,—For some time past I have been anxious to lay my views before the profession upon the pathology and treatment of diphtheria and scarlatina.

In November, 1880, I sent a paper to THE LANCET upon reading in that journal a report of five fatal cases of diphtheria occurring in St. George's Hospital, with the peculiar treatment adopted at that time; I say peculiar, for it was strongly stimulating and tonic *ab initio*, under which the patients speedily succumbed. I then sought to show that the alterative and eliminating plan of treatment with which I commenced had been most successful, having only had two fatal cases under my care during thirty years of active practice. I ought to state that I always commenced by brushing off, as far as practicable, the fungus deposit on the tonsils and fauces with a strong solution of nitrate of silver, and continued this application daily while any deposit was observed on the surface. During the last few years, however, the science of bacteriology has done much to aid us in arriving at a more correct view of the pathology and treatment of diphtheria and scarlatina, as well as cholera. The scientific researches and experiments of Drs. Tyndall and Koch, M. Pasteur, and others, have lately demonstrated that we have chemical agents which will destroy the microbes and their spores in a very short space of time, which can be administered as remedies internally in these septic diseases: e.g., perchloride of mercury (1 in 20,000) will act as a microbicide in ten minutes; this, therefore, may be termed the prince of antiseptics. Chlorine and iodine, oil of mustard, and oil of peppermint are likewise very decided in their action as antiseptics, and may be utilised in the above-named diseases. As it is known that these micro-organisms multiply with frightful rapidity when once within the body, it is important to adopt energetic measures for their destruction and extermination without loss of time. To this end I would recommend in a case of diphtheria to commence by washing off the fungus-like deposit with a camel's-hair brush dipped in a solution of the perchloride of mercury or the liquor sodæ chloratæ. I should then administer a mustard emetic so as to dislodge and evacuate these micro-organisms from the stomach, œsophagus, and fauces. In half an hour, or as soon as the system had recovered from the effects of the emetic, I should give a dose of the liquor hyd. perchlorid. in a little strong peppermint water; this might be repeated in another hour, and, in about half an hour after this second dose of liquor hyd., a dessertspoonful or a medium dose of castor oil in peppermint water given as an effectual evacuant. Having cleansed the entire gastro-enteric canal of these pernicious atoms, those that have got into the blood must be disposed of in the way that Nature is wont to do—i.e., by the emunctories of the body,—aiding her in various ways: viz., by keeping the patient warm in bed in an airy apartment, administering diaphoretic salines with chlorate of potash, giving easily digested food—e.g., pure milk, beef-tea, barley water, and cocoatina. This treatment is all that is necessary for two or three days, especially while any febrile symptoms are present; tonics and stimulants in the early stage must not be given. Under the above regimen the system will very soon manifest salutary reaction by ridding it of the *materies morbi* under which it has been so distressed. Doubtless there are cases which will demand a course of ferruginous tonics for some little time, as it is well known these animalcules lessen the red particles of the blood.

In the administration of the liquor hyd. perchlorid., we should bear in mind that it is not only a special microbicide, but by its action on the liver it increases the biliary secretion, which is also admitted by many to be an antiseptic; and in order to strengthen our belief in this doctrine, we know that in cholera cases, as soon as the secretion of bile was restored we considered the patient tolerably safe; and, as Dr. Koch stated when writing on the cholera poison, "as soon as the dejections became feculent, the comma-like bacilli gradually disappeared and were not to be seen after recovery." It is tolerably well known, too, that during the visitation of cholera in our fair isle, the calomel treatment was the most successful. The College of Physicians advised the mist. cretæ co. c. opio to start with, and to be kept for use at all dispensaries, not knowing at that epoch the disease depended upon the energetic wriggling bacilli.

Dr. Geo. Johnson, who wrote on the cholera poison fifteen years ago, was not aware of the exact nature of the *materies morbi*, but stated that if it was not expelled from the system by vomiting and purging, or if its exit was hindered by opiates or astringents, collapse soon supervened with fatal results. He commenced with a dose of calomel followed by repeated small doses of castor oil, which was one of the most successful modes of treatment at that time—i.e., the eliminative. Now, I trust, were these bacilli to enter our system, we should screw them up and evacuate them with a mustard emetic followed by the above antiseptic treatment.

From an interesting article which I have just read in THE LANCET of July 23rd, it would go to show that I have been anticipating your views on the subject of bacterio-therapy, when you state that "in these days we find that the pathologist has outstripped the therapeutist." You further remark that we have to find out remedial agents sufficiently potent to destroy the bacterial host without injury to the body. You likewise allude to the all-important art of prophylaxis. One of the most frequent sources of diphtheria and scarlatina has been lately discovered in milk. A few

months since twelve fatal cases of diphtheria were registered in our neighbouring parish, Ealing, in as many days, which was traced to cow's milk. I wrote to the local paper warning the public against allowing animals to drink from stagnant pools, which at this season of the year especially are teeming with organic life, and is doubtless the *fons et origo mali*. While on this important point I should like the profession to agree with me in urging the advisability of all cow-keepers to give their animals, where practicable, the water of the company whence they draw their supply.

In the treatment of scarlatina with the above antiseptic plan, I would comfort the patient and stimulate the cutaneous surface by sponging the body all over with vinegar and warm water for the first three days, and the subsequent three days by skin inunction, as, I believe, is now usually practised as a prophylactic method, to be followed by two or three washings of the body with carbolic soap and warm water and much dry rubbing, which will complete the effective treatment of a severe and frequently intractable disease.

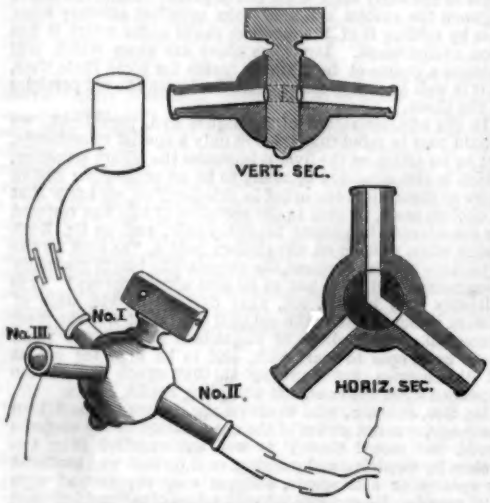
I am, Sirs, yours faithfully,

Fairholme, Hanwell, July 25th, 1887. EMANUEL MAY, M.D.

AN APPARATUS FOR WASHING-OUT THE STOMACH.

To the Editors of THE LANCET.

SIRS,—I can lay claim to no originality in the conception of the apparatus which I wish to bring under the notice of the profession. When in Germany last year I saw it used in the wards by Professor Kohlschutter of Halle, and it struck me at once as being superior to anything I had seen used in England for the purpose, and deserving therefore of a wider publicity. The essential part of the apparatus is a centre piece, consisting of a three-way stopcock, fitted with three outlet tubes. Of these outlets, No. 1 is attached (by india-rubber tubing with a glass interruption) to a vessel of water, or any other liquid to be introduced into the stomach;



No. 2, with its tubing and glass interruption, is continuous with the œsophageal tube; while No. 3, with similar fittings, leads into a receptacle placed on the floor for the waste fluid. To employ the apparatus (the vessel containing the fluid to be used is raised above the level of the patient) the stopcock is turned in such a manner as to connect Nos. 1 and 2, and fluid then passes into the stomach; when sufficient has been thus injected, the cock is turned so as to connect Nos. 2 and 3, and the centre piece lowered slightly; the contents of the stomach are thus by syphon action drawn into the waste receptacle; the performance can now be repeated as often as is deemed necessary, the only requisites being a continuous supply of fresh fluid in the upper vessel, and a slight raising and lowering of the centre piece, with corresponding alternations in the position of the tap. No. 1 and No. 3 can be connected after use to cleanse the tubing if required. Simplicity in management is one great recommendation of the apparatus, but its chief claim is its cleanliness, for nothing that has once passed into the stomach ever returns into the original vessel. The cost of the instrument is not excessive. Messrs. Krohne and Sesemann have made mine for me, the centre piece at a cost of 10*s.* 6*d.*; all the rest of the material need not cost more than a few shillings, as the quality of the tubing is of small moment, and œsophageal tubes are in the possession of most members of the profession.—I am, Sirs, yours obediently,

FRED. J. SMITH, M.R.C.P., M.B.,
Medical Registrar to the London Hospital.

West-street, Finsbury-circus, August, 1887.

THE SEWAGE OF LONDON.

To the Editors of THE LANCET.

SIRS,—"Sanitarian's" letter in THE LANCET of Aug. 6th, while admitting the polluted and foul state of the Thames from London sewage, advocates, as a remedy, the purification of the sewage by precipitation at Barking and Crossness, as well as at various stations within the metropolis, with manganate of soda and sulphuric acid, which never results, he says, "in the production of smelling products." "Neither," he says, "do such ingredients destroy those minute vegetable and animal organisms which are essential for the rapid purification of waters from admixed sewage residues." But suppose we were to admit that the sewage, as it escapes from the outfalls, is precipitated by such a process, the evil he refers to would not be removed. "Sanitarian" speaks of the improved condition of the Thames in 1885-6, when this process was in operation, but unfortunately in the autumn of the latter year I attempted a journey down the river to Barking with the view of ascertaining the state of the Thames at the outfall there, but the condition of the river was so fearfully foul that I found it almost impossible to get there, and when the steamer pulled up at Greenwich, being unable any longer to bear the smell, I was compelled to get off. One thing, I think, is absolutely certain: neither manganate of soda, nor sulphuric acid, nor chloride of lime, nor any other chemical agent will ever succeed in purifying the sewage of any large city, if used only at the stations and at the outfalls; it may be possible, no doubt, during dry weather, when the sewage leaves the outfalls, quietly to precipitate it; but there is this difficulty—and here the difficulty lies, and will ever lie: the *solid* portion of the excreta is not at the outfall to be precipitated. Moreover, in the dry weather it is then snugly lying in the drains under the dwellings of the residents of London, from which it can only be removed by the rainfall, and the rainfall is ever capricious in its operation; sometimes it is delayed for a week, a fortnight, or even a month, but when it does occur the solid excreta is quickly removed from its hiding place in the house drains into the sewers, in which at the upper part there are a great number of large storm outlets, and through these storm outlets the excreta, paper, &c., escape, and gain by that means admission into the rivers. In Birmingham there are about fifty of these storm outlets in the main sewers, and the Drainage Board has found out to its cost how impossible it is to cook the hare before it is caught, and it is this same difficulty the Metropolitan Board has to contend with. The solid portion of the closet soil being viscid and tenacious, it is, as I said before, always more or less retained in the house drains. I pointed that out to Lord Wemyss, who did me the honour of quoting my views in the House of Lords when the Smoke Abatement Bill was under discussion, and when their Lordships, acting in the interests of the residents of the metropolis, wisely threw out the Bill. Your correspondent admits that the state of the Thames at the present time, in consequence of the London sewage, is so bad that it is causing considerable apprehension to those who are responsible for it, and that it is as bad as, if not worse than, it was in 1884? I have shown that the process of purification at the outfalls, as recommended by "Sanitarian," will prove utterly useless and futile; whether we view the question of the utilisation of London sewage as a sanitary, an agricultural, or a financial question, it has hitherto failed in every instance under all these heads, and it will ever continue to fail. Unquestionably, the old midden system was very objectionable, but

the evils of that system were as nothing when compared with the frightful evils, both urban and suburban, which are produced by the present system of underground cesspools. Formerly the cesspool was at the further end of the yard or the garden; now it is under, and sometimes even in, the house itself. As it is necessary to convey the closet soil by some means to the outfalls at Barking and Crossness, it is obvious it must pass from the higher parts of London under the streets and houses before it can get there. If I recollect rightly, Sir Robert Rawlinson, who, by-the-bye, is responsible to a great degree for the present system, said at one of the Social Science meetings that "the district of Belgravia was as flat as a pancake, and but for the ventilators, he predicted, he said, a fearful epidemic in that locality." But, if I am not mistaken, the three factors of decomposition are air, heat, and moisture, and without these factors decomposition cannot take place, and if we have to deal with a foul smell underground, I should say these factors should be excluded from it. In London there are many instances where offensive smells emanate from these underground cesspools. In the House of Commons, where a large sum of money has been recently expended in perfecting the cesspool system, the foul odours are already returning. Johnson properly describes a drain or a sewer as a passage for liquid, and if drains and sewers are kept for that purpose, surely they would flush themselves; and it is equally obvious, if the sewage problem is to be solved, that the excreta sewage must be kept separate and distinct from the rainfall sewage, and that the solid portion of the closet soil must be intercepted at the fountain head, where it may be retained in hermetically sealed iron receptacles without the smallest danger, and in them it may be sent to the farmer for use on his arable land. If this were done, sewage utilisation would no longer be a failure, but it would become a sanitary, an agricultural, and a financial success. I have been over the sewage works of London, Croydon, Birmingham, &c., and if the watercloset system is to be continued, and if the sewage problem is to be really solved, I am convinced the solution of the question must begin where the solution of every difficulty usually begins: I mean at the beginning!—I am, Sirs, yours obediently,

Birmingham, Aug. 6th, 1887. EDWIN CHESSHIRE, F.R.C.S.

PAIN AND ITS INTERPRETATION.

To the Editors of THE LANCET.

SIRS,—So much debatable matter appears every week in your columns, that it is surprising that letters of criticism thereon are so few and far between. It would be uncharitable to suggest that this may be due to lack of interest in perusal or to want of energy in putting pen to paper in reply. Last week, however, there appeared an article upon the "Interpretation of Disease," which contains a series of statements so strangely at variance with universal experience, no less than with common sense, that I feel it is incumbent upon anyone who has read them to controvert them. Mr. H. Cameron Gillies, M.B., the author of the article in question, ventures the following among other assertions concerning pain and its causation: "*Pain never comes where it can serve no good purpose. Pain comes at the right time. The measure of pain which attends an injury or a disease is a prophecy, in that same measure of recovery.* It is in our knowledge that almost all inevitably fatal diseases are not attended with pain."

Now these statements, as is obvious from the context, refer to the beneficent utility of pain to the individual himself, and not in the wider sense in which it would be more possible to read them with patience and a guarded assent. Surely such fallacies scarcely required to be accentuated by italics to stamp them as such. What diseases are above all others "inevitably fatal"? Why, of course, that great class of malignant maladies which pathology comprises under carcinomata and sarcomata. Is pain absent there? Is pain purposive there?—purposive, that is, towards the utility of the individual. Yet Mr. Gillies does not except this great class, this *opprobrium medicinæ*, from his beneficent "law of pain." Pain, he says, in such cases would "serve no good purpose; there is no pain." Is this the grim comfort he would bring to a suffering woman tortured slowly to death by a sloughing scirrhus of the breast, or to a man, made almost unhuman and killed by inches by the slow yet sure ravages of a rodent ulcer? It is too late in the day to attempt to prop up a theory of the invariable and direct beneficence of pain, shutting the eyes to facts to save a teleological theory which experience and reason have alike discredited.

To a reverent believer in evolution pain is more nearly comprehended in its true light and meaning, and much of its sting removed in proportion to that comprehension. The gradual growth of the nervous system from the early dawn of consciousness—the mere sense of externality—up to the delicate and impressionable susceptibility from which we derive all that is best and noblest, has proceeded under the direction of a natural process of selection, and eventuated in the fittest's survival. It has thus come about that the advantage in the race which the sharp reprimand of pain on danger's approach bestowed has, with the intensified susceptibilities which we prize, also afforded us increased possibilities and opportunities of suffering. To the evolutionist much, if not all, is explained; "the mystery of pain," which Hinton helped to dispel, is lightened. Hinton demonstrated its relative nature, and the absence of any constant external antecedent of it. Here there is to be found the comfort which science affords—comfort in the knowledge that pain is in obedience to law, is bound up with the progress of the race. With this knowledge and with this hope, far more than with blind assertions as to the invariable beneficence of pain, one can "kiss the rod," and be

"Patient of pain, though as quick as a sensitive plant to the touch."

I am, Sirs, yours faithfully,

W. J. COLLINS, M.S., M.D., B.Sc. Lond.

Albert-terrace, Gloucester Gate, N.W., Aug. 15th.

To the Editors of THE LANCET.

SIRS,—My friend, neighbour, and adviser, Dr. J. J. B. Taylor of Ulverston, has obliged me with sight of a paragraph in THE LANCET on pain, the result of an inquiry from him, which again was prompted by a conversation between him and myself. May I venture to regard this as an introduction of myself as well as the subject? If so, I would like to submit the following queries:—1. Pain, in spite of its usefulness in the animal economy, nearly always has the air of an intrusion and a disturbance of that economy, but not absolutely so. The two fixed and normal pains in humanity are, it seems to me, those of parturition, limited to one sex, and those of dentition, limited to two or possibly more stages of development. It seems to me that these have a curious analogy, the dentition involving something of a tension of sensitive parts and extrusion of developed germs, although not, as in parturition, a separation from their matrix. It is an important question, Are there any other pains which can be viewed as fixed and normal, so as to take rank with these? It seems to me also that the higher vertebrates, at any rate in their domestic state, in which we know them best, sympathise with humanity *qua* parturition. Is there any knowledge available as to their wild state? And as regards their dentition—e.g., the changes noticeable in a horse's age-teeth—are any pains observed? 2. It seems to me that pain is not only preservative, but didactic—e.g., savage man finds travelling over rough ground painful, and devises mocassins, &c.; civilised man is prompted to discover anæsthetics and anodynes. Thus civilisation grows through pain, whereas pleasure, tending to absorb and satisfy, would never advance our progress, save as regards the means of procuring enjoyment, which, however, terminate in that enjoyment procured and do little to advance humanity. There is (to return to 1) a notable moral effect in the fixed and normal pain of parturition. It seems to impress the mother or dam in the interests of the offspring, and is allied in humanity to the tenacity of maternal affection, and reciprocally to the respect for maternal feelings, of which even hardened specimens of humanity commonly show a trace. And there seems to me to be, when all preservative and didactic uses have been satisfied, a surplus of pain in humanity, of which, I suppose, cancer may be taken as a typical case. It is my belief that this surplus can only be accounted for on moral grounds, as having a disciplerial tendency, not to the sufferers only, but to humanity at large. It is with this moral aspect of the whole question that I am chiefly concerned. But I should for obvious reasons be glad to have answers, so far as the state of our knowledge allows, to the above questions, and the benefit of any remarks to

which my own may give rise. I intended this when I began to be a private letter merely; but if you see fit to publish it, I have no objection, and I do not think my friend, Dr. Taylor, would have any.—I am, Sirs, your obedient servant,

HENRY HAYMAN, D.D.,
Rector of Aldingham; Hon. Canon of Carlisle.

Aldingham, Ulverston, Aug. 15th, 1887.

USEFUL EMPLOYMENT IN THE TREATMENT OF THE INSANE.

To the Editors of THE LANCET.

SIRS,—I have read with much interest the article in your issue of Aug. 6th on the Lunacy Commissioners' report, and am grateful for the prominence you give to occupation as a cardinal point in the treatment of the insane. The Commissioners have, I think, done well to call attention specially to this point, and to express a hope that more attention may be paid to it as a potent remedial agency in the treatment of the insane.

It is pointed out in the report that "the employment of patients of the private class in hospitals and licensed houses is attended with greater difficulty than that of patients in county and borough asylums," and the case of St. Andrew's Hospital, Northampton, is quoted as a notable achievement, inasmuch as *one-third* of the gentlemen in that establishment are engaged in gardening and farm work. This is very creditable to the energetic medical superintendent of that asylum, as it is only during the past two or three years that he has had premises extensive enough to allow the development of the employment system.

I believe I may claim what little credit there may be in being the first to ventilate in the columns of the *Journal of Mental Science* the advantages of employment in the treatment of mental diseases in the upper classes, having written a paper on that subject for the *Journal* of July, 1882. For the encouragement of those medical proprietors and superintendents who may be afraid of the "much thought, trouble, and ingenuity" mentioned in the Commissioners' report, I should like to state that I have found no reason to depart from the practice I adopted seven years ago of insisting on regular occupation for every able-bodied patient in my asylum, and that I have now not the slightest trouble in getting at least *two-thirds* of my gentlemen patients (i.e., all those who are physically fit for work) to engage in regular useful occupation, which percentage compares favourably with the average in county and borough asylums of $\frac{56}{100}$, or the "notable achievement" of St. Andrew's Hospital quoted above, where *one-third* of the male patients are employed. I am perhaps rather too enthusiastic on this subject, but I firmly believe that it has only been found possible to abolish restraint and seclusion in English asylums, and the use of locked doors and airing courts in some Scotch asylums, by reason of the increased and intelligent interest betrayed on the part of asylum superintendents in the useful and rational employment of their patients.

I am, Sirs, your obedient servant,

DAVID BOWER, M.D.

Springfield House Asylum, Bedford, Aug. 11th, 1887.

BORACIC ACID AS A FOOD PRESERVATIVE.

To the Editors of THE LANCET.

SIRS,—The question regarding the use of borax and boracic acid as food preservatives, upon which a joint preliminary report, referred to in your issue of the 13th inst., was recently presented to the Kensington vestry by Dr. Dudfield and myself, arose through my having found boracic acid in a sample of *potted cream* submitted to me officially for analysis, and subsequently in several samples of milk.

It is obvious that if the vendors of foods containing boracic acid are to be proceeded against under the Sale of Food and Drugs Act, the proceedings must be taken under the most severe sections of the Act—those, namely, which are intended to provide against the admixture of any substance actually known to be injurious to health, or likely to be injurious to health, with articles of food; and it therefore becomes necessary to obtain definite evidence as to whether boracic acid and borax can or cannot be considered as injurious additions. Very little information upon this head is forthcoming; but, as you very justly remark in your annotation, what little there is is very decidedly against the use of the drug. This, indeed, is the conclusion that one would naturally anticipate on *a priori* grounds, and I may perhaps say that in the early part of 1886, chiefly upon such grounds, I made some remarks in public against the use of boracic acid preservatives, which were subsequently reproduced in the *Chemical News*.[1] In the report above referred to we did not think it necessary to give the full text of Dr. Förster's experiments and conclusions; but I am very glad that this has now been put before the readers of THE LANCET in Mr. Charles Hancock's excellent translation from *Dingler's Journal*, for the matter is unquestionably one of great public interest and importance. The drug was present in smaller amount in the samples of milk than in the sample of potted cream above referred to. The latter, in fact, contained so much of it that its taste was very distinctly perceptible.

Finally, I venture to draw your especial attention to two passages in our joint report. They are as follows:—

"An eminent authority whom we have consulted refers to the tendency of these substances to set up diarrhœa, a disease very prevalent in hot weather, when the preservative is most used to prevent that change which milk and cream are apt to undergo, rapidly, at a high atmospheric temperature."

"We desire to say, in conclusion, that, though in the present state of our knowledge the injurious action of very small doses of borax or boracic acid, even in the case of infants, and even having regard to the doses being continuous, may perhaps be considered as 'not proven,' it will probably become a question whether the use of any known preservative, in lieu of refrigeration, in any amount, however small, should not be prohibited, in view of possible and indeed probable abuse, and while doubt exists as to the action of the drug employed."

These remarks will, I believe, on consideration, be found tolerably suggestive.

I am, Sirs, yours faithfully,

CHARLES E. CASSAL,
Public Analyst for Kensington, St. George's, Hanover-square, and High Wycombe.

Town Hall, Kensington, Aug. 16th, 1887.

"DISEASE AND MEDICAL ATTENDANCE AT WORKHOUSES."

To the Editors of THE LANCET.

SIRS,—As there have lately been several letters in THE LANCET with regard to the question of admitting "a second medical opinion into the workhouse," my experience in this matter may perhaps interest your correspondents.

I am the resident medical officer of the Chorlton Union Hospital and Workhouse, Manchester, and in the male lunatic wards of the hospital there was some three or four years ago a patient suffering from dementia, and incurably insane. This patient's friends wished him to be removed from the workhouse to a private asylum, and they sent their own medical attendant to visit him in the workhouse. This gentleman, a qualified surgeon, saw the patient in the workhouse, examined him, and filled up the papers necessary for his removal to an asylum. He never communicated with me, and I knew absolutely nothing about the matter until after the patient was removed from the workhouse. I reported the matter at the time to the guardians, and the clerk to the guardians ruled that "a pauper, or the friends of any pauper, had a perfect right to send for any medical man, and such medical man had a perfect right to treat such pauper in any way he pleased, without communicating with the medical officer of the workhouse at all." These were the exact words used by the clerk, which of course settled the matter. I am, Sirs, yours obediently,

August, 1887. J. S. ORCHARD, M.D.

[1] March 13th, 1886.

MANCHESTER WATER SUPPLY.—In view of the rapidly-diminishing quantity of water in store at the Manchester Corporation reservoirs, the authorities have had their attention directed to the question of procuring a further supply from some flooded collieries at Moston, a village adjacent to the city. Samples of the water, which is stated to be of splendid quality and practically inexhaustible, have been taken for analysis.

LIVERPOOL.

(From our own Correspondent.)

THE SUMMER ASSIZES.

MR. JUSTICE DAY concluded the business of the assizes on the 10th inst., having sat for eleven days in the Crown Court. Among other cases were two charges of murder, both by the knife. In one the left lung was wounded, and death occurred shortly after the admission of the deceased man into the Royal Infirmary. The prisoner was found guilty of manslaughter. In the other case the deceased was wounded in the abdomen, and lingered for some time after his admission into the Royal Southern Hospital. His assailant was found guilty of murder, but recommended to mercy.

RIVER POLLUTION.

It is greatly to be hoped that our sanitary authorities will take time by the forelock and steps to purify the river Mersey before it becomes as foul as the Liffey, the Clyde, or the Thames. For years past there have been most unsavoury odours perceptible at low water, especially in hot weather, and were it not for its breadth and the strength of its tides matters would be much worse. Any scheme for diverting the sewage from the river must, of course, be very costly. But it will become more so by keeping; and, taking into account the immense population on both sides of the river, the continuance of this sewage-pollution must be fraught with the greatest danger to them, as well as to all on board vessels stationed in the river.

CONVERSION OF ANOTHER CITY CHURCHYARD INTO A RECREATION-GROUND.

Until within the last few months the churchyard attached to St. Peter's Cathedral Church presented a most ghastly spectacle. It was a wilderness of gravestones, with rank grass here and there, and was a receptacle for all kinds of rubbish. By a mutual arrangement, made between the ecclesiastical and corporation authorities, all this has been changed, and the site has been converted into a recreation-ground of most pleasing appearance. To those who, from absence, have not seen the gradual transition, the change is startling, the wilderness of graves having been converted into walks, grass plots, trees, and shrubs. What is still more pleasing is that it is largely availed of as a place for rest and recreation, seats being provided in different parts, many being induced to leave the adjacent crowded thoroughfare and rest awhile.

THE HOLIDAY SEASON.

There was a small proportion of local representatives at the Dublin meeting, and there will be some at the International Medical Congress at Washington. At present the holiday season is in full vigour, both with medical men and laymen. For those who can go on a distant holiday, Liverpool offers great facilities, it being perfectly easy to go direct to all the more favourite English, Scotch, Welsh, and Irish seaside places, while, for those who prefer a longer distance, trips to America, the Mediterranean, Spain, or Portugal are easily obtained. But there are some persons, professional and lay, to whom holidays are as angels' visits, few and far between. To them Liverpool offers a very fair substitute in the very accessible and popular seaside resorts of New Brighton and Hoylake, where comfortable lodgings can be obtained, and this city can be reached in a very conveniently short time. Southport, though more distant, is soon reached, and on the same line of rail are several very attractive townships and villages, where a complete change of air may be obtained for jaded citizens without taking them out of reach of their duties.

Liverpool, Aug. 16th.

NORTHERN COUNTIES NOTES.

(From our own Correspondent.)

INVITATION TO THE BRITISH ASSOCIATION.

A PUBLIC meeting was held in Newcastle last Wednesday, Sir B. C. Browne (the Mayor) presiding, when it was resolved to invite the British Association to this city in 1889. A very hearty spirit prevailed at the meeting, and Lord Armstrong promised a contribution of £200 towards the expenses, should it be required. On the part of the medical profession, Drs. Embleton and Philipson expressed the feeling that they would not be behind others in endeavouring to make the meeting a success. Dr. Philipson further said, as to the University of Durham and the College of Medicine, he had no doubt they would render all the aid they could. The last time the British Association met in Newcastle was in 1863.

NEWCASTLE ROYAL INFIRMARY.

It will be remembered that in a late note I mentioned that some of the Chinese sailors who were ill aboard the *Foo Nan* in the Tyne were admitted and treated in the Infirmary. The Chinese admiral has now written a grateful letter of thanks for the attention his men received, at the same time enclosing a cheque for £40 as a donation to the institution. At a late meeting held at the infirmary a report was made to the governors of the improved financial state of the house; an alteration was also made in one of the rules requiring, in the case of the admission of a workman to the benefits of the infirmary, if he be employed by an individual or a firm not subscribing to the institution, that a letter shall be written to the employer or firm requesting the adoption of a system of regular workman's contributions or the repayment of the expenses incurred by receiving the patient into the infirmary.

DEATH OF SEPTIMUS W. RAYNE, F.R.C.S.

The death of Mr. S. W. Rayne of this city, I regret to see, is announced as having taken place at Winchester on the 10th inst. Mr. Rayne, who was in his seventy-first year, had retired from the active duties of the profession a couple of years ago, and resided in the south of England. Mr. Rayne was a pupil of the late Mr. Liston. He became M.R.C.S. in 1839, L.S.A. in 1842, and F.R.C.S. Eng. in 1873. He was a very active practitioner, and as surgeon to the police (a post he held for nearly forty years) and North-Eastern Railway Company, his offices brought him a large amount of medico-legal practice, more than usually falls to a general practitioner. He also for many years had a very large private practice. He discharged all his duties with marked fidelity, and his death narrows the circle of the older practitioners of Newcastle, while he will be much regretted for his kindness of heart and many good qualities. I mentioned in a letter about two years ago that on Mr. Rayne's resignation of the police surgeoncy our Town Council accorded him a unanimous vote of thanks for his valuable services, the terms of which were, by direction of the Council, engrossed on vellum.

DUBLIN.

(From our own Correspondent.)

THE DUBLIN HOSPITALS BILL.

IN view of the widespread dislike to the provisions of the proposed Dublin Hospitals Bill, the following resolutions of the Council of the Dublin Hospital Sunday Fund adopted at a recent meeting, may be of interest: "1. The Council of the Dublin Hospital Sunday Fund have had under consideration the Dublin Hospital Bill introduced by the city members. The Council do not at present offer an opinion on the general merits or demerits of the Bill, but wish to observe that the bill provides for the payment to the proposed Hospital Board of the Hospital Sunday Fund and its disposal by that board. The Council are satisfied that the subscribers to the fund would not consent to entrust the management of the fund to the proposed Board, and they desire to impress upon the promoters that they must not reckon upon the Hospital Sunday Fund forming any part of the proposed revenue of the Board." "2. The Dublin Hospital Sunday Fund Council, believing that, in the interests of the Dublin hospitals, it is desirable that a committee should be formed to take into consideration the various clauses in the Bill and their bearing on the hospitals of Dublin, recommend that a committee be appointed with this object, consisting of the Distribution Committee and the honorary secretaries of the Dublin Hospital Sunday Fund, and some members of each of the hospitals benefiting by the fund, having under fifty beds, and two members from each hospital of over fifty beds."

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To the Editors of THE LANCET.

SIRS,—As there have lately been several letters in THE LANCET with regard to the question of admitting "a second medical opinion into the workhouse," my experience in this matter may perhaps interest your correspondents.

I am the resident medical officer of the Chorlton Union Hospital and Workhouse, Manchester, and in the male lunatic wards of the hospital there was some three or four years ago a patient suffering from dementia, and incurably insane. This patient's friends wished him to be removed from the workhouse to a private asylum, and they sent their own medical attendant to visit him in the workhouse. This gentleman, a qualified surgeon, saw the patient in the workhouse, examined him, and filled up the papers necessary for his removal to an asylum. He never communicated with me, and I knew absolutely nothing about the matter until after the patient was removed from the workhouse. I reported the matter at the time to the guardians, and the clerk to the guardians ruled that "a pauper, or the friends of any pauper, had a perfect right to send for any medical man, and such medical man had a perfect right to treat such pauper in any way he pleased, without communicating with the medical officer of the workhouse at all." These were the exact words used by the clerk, which of course settled the matter. I am, Sirs, yours obediently,

August, 1887. J. S. ORCHARD, M.D.

[1] March 13th, 1886.

MANCHESTER WATER SUPPLY.—In view of the rapidly-diminishing quantity of water in store at the Manchester Corporation reservoirs, the authorities have had their attention directed to the question of procuring a further supply from some flooded collieries at Moston, a village adjacent to the city. Samples of the water, which is stated to be of splendid quality and practically inexhaustible, have been taken for analysis.

LIVERPOOL.

(From our own Correspondent.)

THE SUMMER ASSIZES.

MR. JUSTICE DAY concluded the business of the assizes on the 10th inst., having sat for eleven days in the Crown Court. Among other cases were two charges of murder, both by the knife. In one the left lung was wounded, and death occurred shortly after the admission of the deceased man into the Royal Infirmary. The prisoner was found guilty of manslaughter. In the other case the deceased was wounded in the abdomen, and lingered for some time after his admission into the Royal Southern Hospital. His assailant was found guilty of murder, but recommended to mercy.

RIVER POLLUTION.

It is greatly to be hoped that our sanitary authorities will take time by the forelock and steps to purify the river Mersey before it becomes as foul as the Liffey, the Clyde, or the Thames. For years past there have been most unsavoury odours perceptible at low water, especially in hot weather, and were it not for its breadth and the strength of its tides matters would be much worse. Any scheme for diverting the sewage from the river must, of course, be very costly. But it will become more so by keeping; and, taking into account the immense population on both sides of the river, the continuance of this sewage-pollution must be fraught with the greatest danger to them, as well as to all on board vessels stationed in the river.

CONVERSION OF ANOTHER CITY CHURCHYARD INTO A RECREATION-GROUND.

Until within the last few months the churchyard attached to St. Peter's Cathedral Church presented a most ghastly spectacle. It was a wilderness of gravestones, with rank grass here and there, and was a receptacle for all kinds of rubbish. By a mutual arrangement, made between the ecclesiastical and corporation authorities, all this has been changed, and the site has been converted into a recreation-ground of most pleasing appearance. To those who, from absence, have not seen the gradual transition, the change is startling, the wilderness of graves having been converted into walks, grass plots, trees, and shrubs. What is still more pleasing is that it is largely availed of as a place for rest and recreation, seats being provided in different parts, many being induced to leave the adjacent crowded thoroughfare and rest awhile.

THE HOLIDAY SEASON.

There was a small proportion of local representatives at the Dublin meeting, and there will be some at the International Medical Congress at Washington. At present the holiday season is in full vigour, both with medical men and laymen. For those who can go on a distant holiday, Liverpool offers great facilities, it being perfectly easy to go direct to all the more favourite English, Scotch, Welsh, and Irish seaside places, while, for those who prefer a longer distance, trips to America, the Mediterranean, Spain, or Portugal are easily obtained. But there are some persons, professional and lay, to whom holidays are as angels' visits, few and far between. To them Liverpool offers a very fair substitute in the very accessible and popular seaside resorts of New Brighton and Hoylake, where comfortable lodgings can be obtained, and this city can be reached in a very conveniently short time. Southport, though more distant, is soon reached, and on the same line of rail are several very attractive townships and villages, where a complete change of air may be obtained for jaded citizens without taking them out of reach of their duties.

Liverpool, Aug. 16th.

NORTHERN COUNTIES NOTES.

(From our own Correspondent.)

INVITATION TO THE BRITISH ASSOCIATION.

A PUBLIC meeting was held in Newcastle last Wednesday, Sir B. C. Browne (the Mayor) presiding, when it was resolved to invite the British Association to this city in 1889. A very hearty spirit prevailed at the meeting, and Lord Armstrong promised a contribution of £200 towards the expenses, should it be required. On the part of the medical profession, Drs. Embleton and Philipson expressed the feeling that they would not be behind others in endeavouring to make the meeting a success. Dr. Philipson further said, as to the University of Durham and the College of Medicine, he had no doubt they would render all the aid they could. The last time the British Association met in Newcastle was in 1863.

NEWCASTLE ROYAL INFIRMARY.

It will be remembered that in a late note I mentioned that some of the Chinese sailors who were ill aboard the *Foo Nan* in the Tyne were admitted and treated in the Infirmary. The Chinese admiral has now written a grateful letter of thanks for the attention his men received, at the same time enclosing a cheque for £40 as a donation to the institution. At a late meeting held at the infirmary a report was made to the governors of the improved financial state of the house; an alteration was also made in one of the rules requiring, in the case of the admission of a workman to the benefits of the infirmary, if he be employed by an individual or a firm not subscribing to the institution, that a letter shall be written to the employer or firm requesting the adoption of a system of regular workman's contributions or the repayment of the expenses incurred by receiving the patient into the infirmary.

DEATH OF SEPTIMUS W. RAYNE, F.R.C.S.

The death of Mr. S. W. Rayne of this city, I regret to see, is announced as having taken place at Winchester on the 10th inst. Mr. Rayne, who was in his seventy-first year, had retired from the active duties of the profession a couple of years ago, and resided in the south of England. Mr. Rayne was a pupil of the late Mr. Liston. He became M.R.C.S. in 1839, L.S.A. in 1842, and F.R.C.S. Eng. in 1873. He was a very active practitioner, and as surgeon to the police (a post he held for nearly forty years) and North-Eastern Railway Company, his offices brought him a large amount of medico-legal practice, more than usually falls to a general practitioner. He also for many years had a very large private practice. He discharged all his duties with marked fidelity, and his death narrows the circle of the older practitioners of Newcastle, while he will be much regretted for his kindness of heart and many good qualities. I mentioned in a letter about two years ago that on Mr. Rayne's resignation of the police surgeoncy our Town Council accorded him a unanimous vote of thanks for his valuable services, the terms of which were, by direction of the Council, engrossed on vellum.

DUBLIN.

(From our own Correspondent.)

THE DUBLIN HOSPITALS BILL.

IN view of the widespread dislike to the provisions of the proposed Dublin Hospitals Bill, the following resolutions of the Council of the Dublin Hospital Sunday Fund adopted at a recent meeting, may be of interest: "1. The Council of the Dublin Hospital Sunday Fund have had under consideration the Dublin Hospital Bill introduced by the city members. The Council do not at present offer an opinion on the general merits or demerits of the Bill, but wish to observe that the bill provides for the payment to the proposed Hospital Board of the Hospital Sunday Fund and its disposal by that board. The Council are satisfied that the subscribers to the fund would not consent to entrust the management of the fund to the proposed Board, and they desire to impress upon the promoters that they must not reckon upon the Hospital Sunday Fund forming any part of the proposed revenue of the Board." "2. The Dublin Hospital Sunday Fund Council, believing that, in the interests of the Dublin hospitals, it is desirable that a committee should be formed to take into consideration the various clauses in the Bill and their bearing on the hospitals of Dublin, recommend that a committee be appointed with this object, consisting of the Distribution Committee and the honorary secretaries of the Dublin Hospital Sunday Fund, and some members of each of the hospitals benefiting by the fund, having under fifty beds, and two members from each hospital of over fifty beds."

HEALTH OF IRELAND: QUARTERLY RETURN.

The birth-rate for the June quarter was 0·7 under the average rate for the corresponding quarter of the last five years; while the deaths were slightly above those registered in the second quarter of 1886. Compared with those for the corresponding quarter of last year, the returns of pauperism, furnished by the Local Government Board, show a decrease of 705 in the average number of workhouse inmates on Saturdays during the quarter, and a decrease of 42,833 in the average number of persons on out-door relief. The registrars in their notes report the presence of the following diseases: Measles in 37 districts, rötheln in 6, scarlatina in 36, whooping-cough in 39, and fever in 32.

DISTRICT LUNATIC ASYLUMS, IRELAND.

A Bill has been issued this week to amend the provisions for superannuating the officers of Irish district lunatic asylums. The Bill provides that such officers shall be eligible for superannuation annuities if incapacitated by sickness or age, or if they have served in the asylum for not less than fifteen years, they being fifty years of age or upwards. The retiring allowance is to be paid out of the rates and funds applicable to the maintenance of the asylum, and the amount paid is not to exceed two-thirds of the annual salary, rations, and other allowances. It is required that His Excellency the Lord-Lieutenant approve all such grants.

At Dungannon, last week, Quartermaster Sergeant Armitage committed suicide by taking a quantity of cyanide of potassium. Death, as is usual in poisoning from this substance, was very rapid.

Dublin, August 16th.

Obituary.

GUSTAVUS CHARLES PHILIP MURRAY, M.D.

THE tidings of the sudden death of Dr. Murray, at the comparatively early age of fifty-six, must have come as a great shock to a large and wide-reaching circle of patients and friends. He had been suffering for some time from a degree of general malaise and failure of strength that made the daily calls and cares of practice a burden rather than the pleasure they had been to him; but his sudden death from heart failure, on the 7th of this month, at his residence in Great Cumberland-street, was a quite unexpected and very severe blow.

Dr. Murray, who was born in 1831 at Port of Spain, Trinidad, was the youngest son of the Hon. Edward Murray, marshal of that island. Through boyhood and youth his health was so delicate that his general education was chiefly obtained at private schools, in England, and he was obliged twice to revisit his birthplace for his health's sake. When his choice of a profession had been made, he became a student in the medical school of King's College, in the days of Todd and Bowman, of Fergusson and Partridge, and when Arthur Farre was Professor of Obstetrics. There young Murray worked well and got a good hold of the science and art of medicine; with his ardent spirit he could hardly have done otherwise; and there, as elsewhere throughout his career, he made friends who remained friends for life. In 1856 he became a member of the Royal College of Surgeons of England, and after that he studied at Edinburgh and at Vienna, taking the M.D. degree of the University of Edinburgh in 1860. Having, somewhat early we imagine, decided on seeking obstetric practice as his specialty, Dr. Murray settled down without loss of time in Green-street, which, if not the rose, is, as every medical man knows, very near the rose of medical position, and began to look out eagerly for appointments and patients. The former he obtained quickly, and through them he rapidly gained very largely the practical experience that every true medical man so hungers after. He was for several years physician-accoucheur and physician for the diseases of women and children to the St. George's and St. James's Dispensary; physician, and later on consulting physician-accoucheur, to the St. Pancras Provident Dispensary; and for very many years, and down to the day of his death, he was obstetric physician to the Great Northern Central Hospital. We cannot pretend to enumerate here all the honorary appointments that Dr. Murray at various times held, and to the work in which he gave so much valuable time and thought, but we must note his connexion with the Establishment for Gentlewomen in Harley-street, where he did excellent work, and to which he was still physician for the diseases of women when he died. He was a Fellow of the Edinburgh Obstetrical Society; and was one of the original Fellows of the Obstetrical Society of London, in which he filled in succession almost all the offices of honour and work, except the highest of all—that of president; for when that crowning distinction was offered to him, in 1884, the wear and tear of practice had so far told on him that, with great reluctance, and in deference to medical advice, he felt obliged to decline the coveted honour.

Very early in his career Dr. Murray began to send contributions to the Obstetrical Transactions and Journal, and to the medical papers; but his special fitness for the line of work he had chosen was soon recognised, and the demands of practice gradually more and more absorbed his time and thought, so that he ceased to write, and had to be content, as many other hard-worked medical men have been, to make known the results of his experience and observation orally, instead of putting them on record for the benefit of future as well as of present practitioners.

Dr. Murray was markedly skilful and successful in the treatment of the diseases of women and children, but it will be generally admitted that he especially excelled in the practice of midwifery. His manual dexterity was very great, and served him well in the management of difficult labours. And his judgment was equally good. He knew when to wait, and at what moment to interfere; and the natural result was that as an accoucheur he was highly successful, and his counsel and help were greatly valued by the numerous practitioners who called him in consultation. In untiring devotion to the patients committed to his charge, and in the tenderest regard for their feelings, Dr. Murray could not be surpassed. No trouble was too great for him to take when patients were concerned. He would sacrifice for them his time, convenience, and health in the most unsparing manner. Nor was this devotion, in his case, but a phase of a merely professional instinct. In him it was the outcome of kindness of heart and a sympathetic nature which endeared him to his friends and fellow-workers as much as to the sick and suffering, who relied with a happy confidence upon the physician who never failed them.

In social life Dr. Murray's cheeriness of manner, which was rarely wanting, made his companionship pleasant and very welcome, and his somewhat keen appreciation of the humorous side of life had its share in making him a very popular member of our profession. He will be long and sorely missed, for he possessed qualities which, happily for human nature, even the ever-increasing struggle for existence in professional life has not yet succeeded in rendering less acceptable and endearing.

In 1856 Dr. Murray married Fanny Tryphena, the daughter of John Yearsley, Esq., of The Moors, Cheltenham, who and a daughter and six sons are left to lament their loss. The second son, Mr. Stormont Murray, has followed in his father's steps, and is in practice in London.

Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—The following gentlemen have been duly admitted Licentiates of the College:—

Barrett, William, Ashton-under-Lyne.
Green, Frederic W. Edridge, St. Bartholomew's Hospital.
Lewis, Ernest Edward, Middlesex Hospital.
Phillips, Stanley Clyde, Plymouth.
Trevelyan, Basil Riddell Trevelyan, Clifton.
Waterhouse, Herbert Furnivall, Dunoon, Scotland.
Woodward, William, St. Bartholomew's Hospital.

THE Jubilee of the Queen was commemorated at Southend on the 13th inst. by the laying of a memorial stone of the first local hospital, to be called the Victoria Hospital.

ON the 13th inst. a conference of dentists was held in Dublin for the purpose of establishing an Irish branch of the British Dental Association.

VACCINATION GRANT. — Dr. W. J. Smyth, Shipley, Yorks, has obtained the grant for efficient vaccination in his district (fourth time).

THE subscriptions in aid of the proposed Victoria Infirmary at Glasgow now amount to nearly £14,000. The committee are unwilling to begin building operations until the funds amount to about £20,000.

ARRANGEMENTS have been made with a view to the transfer of the Bradford Fever Hospital to the Corporation of that town being completed and possession being taken on the 1st prox.

THE 39th annual meeting of the subscribers to the Weymouth Sanatorium was held on the 4th inst., when satisfactory medical, financial, and general reports were presented and adopted.

BEQUESTS.—The late Mr. Thomas Synnott has left £200 to Jervis Street Hospital; £100 to the Mater Misericordiæ; £100 to the Hospital for Incurables; and £300 to Michael's Hospital, Kingstown.

ON the 17th inst. a portion of the burial ground in the rear of St. James's Church, Hampstead, amounting to about two and a half acres, was formally opened and dedicated to the public as an open space.

UNIVERSITY OF EDINBURGH.—We are asked to state that to the name of Daniel Mowat, in the list of gentlemen who were announced in our last issue as having obtained the M.D. of the University, should have been prefixed the sign indicating that his thesis received commendation.

ON the 10th inst. the Mayor of Bradford (Alderman Angus Holden) formally opened a temporary building which is to serve the purpose of the Bradford Hospital for the Sick Children of the Poor until funds are raised for a permanent and larger hospital.

RABIES IN CHESHIRE.—At the Macclesfield County Police Court on the 16th inst. the magistrates issued an order directing dogs to be kept under control throughout the whole of the Macclesfield district until further orders. A similar order expired a month ago, and since then several cases of rabies have occurred in the district.

AFTER much negotiation between the Folkestone Hospital Committee and the Government, the latter have agreed to restore the old battery site to the Earl of Radnor, from whose estate it was severed some years ago. The Earl of Radnor will transfer the site to the town authorities for the erection of a new hospital.

MR. H. C. RAIKES, M.P., visited the Morley House Seaside Convalescent Home, St. Margaret's Bay, on the 11th inst., for the purpose of opening the new wing erected by Lord Wolverton, who had contributed £1000 to the institution, in order that provision might be made for four London postmen convalescent from accident or disease.

THE DARENTH ASYLUM.—On the 6th inst. the managers of the Metropolitan District Asylums paid their annual visitation to the establishment under their control at Darenth, in which 800 imbeciles and harmless insane inmates are accommodated. The result of the inspection was reported as satisfactory, and the officers were congratulated upon the state of efficiency in which they kept the institution.

ROYAL UNIVERSITY OF IRELAND.—The following Exhibitions and Honours have been awarded at the First Examination in Medicine:—Exhibitions: First Class (£30), George Hewitt Frost; Second Class (£15), Katherine M. Maguire. Honours: First Class, G. Hewitt Frost; Second Class, Katherine M. Maguire, James B. Moore, Patrick McGann, Robert Fraser Moore. Upper Pass Division: James F. Carroll, Robert J. Gordon, Isabel W. Harper, James J. Thompson, Michael Toomey.

RETIRING ALLOWANCE.—On the 13th inst., at the weekly meeting of the Board of Guardians of the Caistor Union, attention was drawn to the fact that the visiting justices had recommended to quarter sessions an allowance to Dr. Palmer, on retiring from the post of medical officer of the Bracebridge Lunatic Asylum, Lincoln, of £500. After some discussion, the board decided to reaffirm their original resolution on the subject in favour of a pension of £350 a year only.

MEDICAL NOTES IN PARLIAMENT.

Teaching University for London.

IN the House of Commons on the 12th inst., Mr. W. H. Smith informed Mr. Bryce that the petitions praying for the constitution of a teaching university for London had been referred by Her Majesty to a committee of the Lords in Council, to consider and report upon. The Government did not at present contemplate the appointment of a Royal Commission to inquire into the subject.

Volunteer Medical Officers.

On the 16th inst., Sir G. Hunter asked the Secretary of State for War whether there was any objection to the adoption of the recommendations of the Volunteer Medical Association with reference to rank &c. of Volunteer medical officers submitted to the War Office. The recommendations were as follows:—(1) That all appointments to the Volunteer Medical service should in the first instance be to the rank of acting-surgeon. (2) That acting surgeons upon obtaining the proficiency certificate should be commissioned and gazetted as surgeons. (3) That the substantive rank of surgeon-major should be given after twelve years' service, as in the Army, after such examination as may be deemed necessary. (4) That the whole of the medical officers be placed in a seniority list under the heading "Volunteer Medical Staff," the regiment or company of the staff corps to which the officers may be attached being placed after his name.—Mr. E. Stanhope, in reply, said that he was able to approve generally the proposals of the Association, but that some questions of detail still remained to be considered. He might, however, say that the grant of the rank of surgeon-major to Volunteer Medical officers after twelve years' service, and the insertion of their names in the Army list as Volunteer Medical Staff, would be approved.

Infant Mortality.

In reply to Mr. Picton, Mr. Ritchie said that inquiries had been instituted in thirty large towns and cities of England and Wales, not only with regard to diarrhœa, but in relation to choleraic outbreaks. The inquiries extended over six weeks of the year during which the disease was most fatal. As they progressed it became necessary to initiate fresh lines of search. To show the magnitude of the matter he might say that there were no less than 15,936 cases of deaths from diarrhœa registered in the third quarter of last year. The work was now actively progressing, and the board hoped that when the result of the present summer was obtained, they would be able to prepare a summary report of the whole inquiry. He was aware that several local authorities had for six years been incurring expense for meteorological observations, and the investigations had been of great service.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BIGGS, CHARLES E. F. M., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third District of the Malmesbury Union.

EMMERSON, J. B., M.D.Durh., M.R.C.S., has been appointed Certifying Surgeon under the Factory Act to the Biggleswade District, vice C. P. Stevens, resigned.

FISHER, H. HOLDRICK, M.B.Lond., L.R.C.P.Lond., M.R.C.S., has been appointed Senior Resident Medical Officer to the Hospital for Sick Children, Pendlebury, Manchester, vice Kurshaw, resigned.

MACLAGAN, CHARLES G., M.B., C.M.Ed., has been appointed Medical Officer for the Berwick District of the Berwick Union, vice Mackay, resigned.

MADDOX, RALPH H., M.B.Ed., M.R.C.S., has been appointed Resident House-Surgeon to the Edinburgh Maternity Hospital.

MARTIN, JOSEPH H., M.R.C.S., L.S.A., has been appointed Medical Officer for the Warboys District of the St. Ives Union.

PRICHARD, RICHARD, M.D., C.M.Edin., has been appointed Medical Officer of Health to the Cardiff Union Rural Sanitary Authority, vice F. W. Granger, M.R.C.S., deceased.

Vacancies.

In compliance with the desire of numerous subscribers, it has been decided to resume the publication under this head of brief particulars of the various Vacancies which are announced in our advertising columns. For further information regarding each vacancy reference should be made to the advertisement.

BIRMINGHAM GENERAL HOSPITAL.—House Governor. Salary £300 a year, with board and apartments.

BRADFORD INFIRMARY.—Junior House-Surgeon. Salary £50 per annum, with board, residence, and washing.

BRIGHTON AND HOVE LYING-IN INSTITUTION—House-Surgeon. Salary £120 per annum, with furnished apartments, gas, coals, and attendance.

CANCER HOSPITAL, Brompton, S.W.—Resident Assistant House-Surgeon. Honorarium £35 per annum, with board and residence.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Assistant Physician.

DENBIGHSHIRE INFIRMARY, Denbigh. — House-Surgeon. Salary to commence at £85 per annum, with board, residence, and washing in the house.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Surgeon to Out-patients.

GAINSBOROUGH FRIENDLY SOCIETIES MEDICAL ASSOCIATION.—Resident Medical Officer. Salary £106 per annum, together with midwifery fees, house rent, rates, &c.

JARROW-ON-TYNE MEMORIAL HOSPITAL.—House-Surgeon. Salary to commence at £130 per annum, with board and residence.

LIVERPOOL DISPENSARIES.—Two Assistant Surgeons. Salary £80 per annum each, with apartments, board, and attendance.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer. Salary £150 per annum, with board and residence.

NORFOLK AND NORWICH HOSPITAL.—Resident Secretary and House Steward. Salary £100 per annum, with board and furnished apartments.

PAROCHIAL BOARD OF PENNYGOWN AND TOBOSAY.—Medical Officer. Salary £100 a year.

ROYAL BERKS HOSPITAL, Reading.—Assistant House-Surgeon. Board and lodging, but no salary.

ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL.—Assistant House-Surgeon. Salary, with board and residence, £60 per annum.

ST. PETER'S HOSPITAL FOR STONE, Henrietta-street, Covent-garden.—House-Surgeon. Honorarium (for six months) 25 guineas, board, lodging, and washing.

ST. SAVIOUR'S UNION INFIRMARY, East Dulwich-grove, Champion-hill, S.E.—Assistant Medical Superintendent. Salary £130 per annum, with furnished apartments, board, and washing.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Resident Medical Officer. Salary £60 per annum.

Births, Marriages, and Deaths.

BIRTHS.

CASSIDY.—On the 14th inst., at Harley-street, Cavendish-square, the wife of Joseph Lamont Cassidy, M.D., of a son.

COX.—On the 12th inst., at Claverton-street, S.W., the wife of J. Leslie Cox, L.R.C.P. Ed., of a daughter.

EMMETT.—On the 10th inst., at Woodville, Kingston-road, Portsmouth, the wife of Richard Emmett, M.R.C.S., L.R.C.P.Lond., of a daughter.

HAIG-BROWN.—On the 8th inst., at Charterhouse, Godalming, the wife of Clarence W. Haig-Brown, M.D., of a daughter.

HOOLE.—On the 16th inst., at Parkhurst-road, N., the wife of Henry Hoole, M.D.Lond., of a son.

WILLEY.—On the 16th inst., at Elmhurst, Bromley, Kent, the wife of Henry Willey, M.B.Lond., F.R.C.S., of a daughter.

WILSON.—On the 11th inst., at the Free Church Manse, Liberton, Midlothian, the wife of Claude Wilson, M.D., of a daughter.

MARRIAGES.

DAVIDSON—BROWN.—On the 9th inst., at St. James's Church, Nottingham, Charles Robert Davidson, M.B., M.R.C.S., to Emily, eldest daughter of John Brown, Esq., of Park Valley.

FAWCETT—LLOYD.—On the 6th inst., at the Parish Church, Conwil Caio, Carmarthenshire, W. J. Fawcett, Surgeon-Major, Army Medical Staff, to K. M. Ailce, younger daughter of the late Charles Lloyd, Esq., of Brunant.

HARTLEY—DAVIES.—On the 6th inst., at the Parish Church, Oswestry, Horace Hartley, M.R.C.S., L.R.C.P., to Nora, daughter of the late Henry Davies, Solicitor, Oswestry, Salop.

KENYON—WILTON.—On the 3rd inst., at St. Michael and All Angels', North Kensington, W., George Hebert Kenyon, M.D., to Annie Caroline, younger daughter of the late Rev. Edward Wilton, M.A.Oxon., Vicar of Osberton, Notts, and Domestic Chaplain to the late Earl of Galloway.

LIMONT—JACKSON.—On the 11th inst., at Crosthwaite Church, Keswick, by the Rev. H. D. Rawnsley, M.A., assisted by the Rev. J. S. Ostle, M.A., James Limont, M.B., M.R.C.P., of 3, Eldon-square, Newcastle-on-Tyne, to Margaret Jessie, daughter of the late Richard Jackson, Esq., of Liverpool.

PARTRIDGE—LOADER.—On the 10th inst., at St. Mark's, Coburg-road, Old Kent-road, S.E., William Thomas Partridge, L.R.C.P., M.R.C.S., to Letitia Rose, only daughter of Alfred Loader, Esq., of 60, Trafalgar-road, S.E.

POTTER—KNOCKER.—On the 15th inst., at All Hallow's, Tottenham, by the Rev. Prebendary Wilson, M.A., Vicar, Edward Furniss Potter, M.R.C.S., L.R.C.P.Lond., of Hull, to Ada Florence, second daughter of Charles Knocker, of Tottenham.

ROSS—ANDERSON.—On the 9th inst., at St. Paul's Church, Edinburgh, John Ross Home Ross, M.B., C.M., to Julia Caroline, eldest daughter of C. F. White, Esq., of Whitby, and widow of Charles F. Anderson, Esq.

STATHAM—GILL.—On the 3rd inst., at Kirk Malew, Isle of Man, Reginald Whiteside Statham, M.R.C.S., L.S.A., to Nessy, third daughter of the Rev. Hugh Stowell Gill, M.A., Vicar of Malew, and Rural Dean.

DEATHS.

GIBSON.—On the 8th inst., at Orton, Westmoreland, Thomas Gibson, M.D., M.R.C.S., J.P., aged 53.

GILLESPIE.—On the 12th inst., at Ticehurst, John Williams Gillespie, M.D., late of 25, Porchester-terrace, and formerly of the 5th Fusiliers and of the Isle of Mauritius.

POTTER.—On the 12th inst., at North-street, Romford, Essex, Charles Potter, L.S.A., aged 73.

RAYNE.—On the 10th inst., at Winchester, S.W. Rayne, F.R.C.S.Eng., of 6, Hyde-park Mansions, and late of Newcastle-on-Tyne, in his 71st year.

WILLIAMS.—On the 7th inst., at Meadhurst, Eastbourne, W. D. Williams, M.D.Cantab., of Belmont Lodge, Reigate, in the 80th year of his age.

N.B.—*A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 18th, 1887.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia tn Varuo.	Max. Temp. Shade.	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Aug. 12	30·00	W.	60	55	107	71	55	...	Overcast
,, 13	29·78	E.	60	57	101	69	57	...	Overcast
,, 14	29·94	N.W.	58	55	102	68	53	...	Cloudy
,, 15	30·05	N.	56	51	100	73	51	...	Hazy
,, 16	29·78	E.	60	56	79	65	56	...	Overcast
,, 17	29·80	S.E.	57	55	92	66	54	·59	Raining
,, 18	29·88	N.	59	55	...	...	53	·80	Cloudy

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked and addressed to the Sub-Editor.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "to the Publisher."*

We cannot undertake to return MSS. not used.

THE STUDENTS' NUMBER OF "THE LANCET" will be published on Saturday, September 3rd. Those gentlemen holding official situations connected with medical institutions in the United Kingdom who have not yet forwarded the necessary information to our Office for publication in that number are earnestly requested to send it *without the delay of a single post.*

THE SANITARY CONDITION OF THE PALACE OF WESTMINSTER.

NOTWITHSTANDING the expense which has been incurred in perfecting the drainage beneath the Houses of Parliament, complaint is still made that the atmosphere of the Palace of Westminster is vitiated by disagreeable effluvia. An explanation of this serious annoyance has been offered by Mr. Bailey-Denton, who maintains that the noxious odours are due to the escape of what is called "ground air" from the subsoil of the Palace. The Thames at Westminster is polluted by the main drainage, and the tidal water of the river, as it passes and repasses along the face of the Embankment wall in front of the Houses of Parliament, finds its way in and out under the wall, thereby saturating the subsoil. Having thus percolated into and beneath the foundations of the Palace, the water rises and falls with the action of the tide, and the foul air is forced upwards into the Houses of Parliament.

Wounded.—We must refer our correspondent to the Secretary of the St. John Ambulance Society, St. John's Gate, Clerkenwell.

THE UNQUALIFIED ASSISTANT.

To the Editors of THE LANCET.

SIRS,—The vexed question of the right of the unqualified man to practise is continually cropping up in the medical journals. One has only to refer to the advertisement sheet of THE LANCET to see how overcrowded the profession is. Yet, whilst doing all in our power to stop further ingress among our ranks, would it not be fairer, more in the spirit of "as we ourselves would be done by," to let him, within safe and easily-defined limits, run his life unmolested? Many of this unfortunate class have been following their calling for years, and are too old to gain a livelihood by other means. Take this from them, and the breadwinner of many a family is taken also. None of us, even in these hard times, wish this. At the most it is not a very great slice out of our loaf, and each year it will be smaller, until the unqualified man will be as rare as the once familiar "in practice prior to 1815."

I am, Sirs, faithfully yours,

Aug. 15th, 1887. D. F. J.

BERLIN MARRIAGE STATISTICS.

SOME interesting figures with regard to marriages in Berlin have been issued by the Statistical Office in that city. It appears that, of the 13,866 marriages which took place in 1885, only 100 were between blood relations—viz., 95 between cousins and 5 between uncles and nieces. Among men there were 11,911 first marriages, 11,123 being with spinsters, and 799 with widows or divorced wives. There were 1905 second and later marriages among men, 1441 being with spinsters and 504 with widows and divorced wives. Of the widowers who re-entered the married state, 611 did so within a year of bereavement, 359 within two years, 138 within three years, and 92 married again between three and four years after bereavement, the number of re-marriages falling considerably after this. One widower married after living single over thirty years, and eight divorced couples were re-married, the husband being in one case seventy years old.

Indignant has not enclosed his card.

BODY RESISTANCE TO ELECTRICAL CURRENT.

To the Editors of THE LANCET.

SIRS,—In a letter which appeared in THE LANCET of July 30th, p. 239, Dr. Steavenson touched on the resistance of the body with a needle attached to one pole beneath the skin. This resistance he estimates at 500 ohms; and doubtless in some parts of the body—for example, in the palms of the hands, this is by no means too high. Reference is also made to Dr. Apostoli's electrical treatment of uterine fibroids; and here I believe that the resistance of the body between the external electrode on the abdomen and the sound in the uterus or needle in the substance of a uterine tumour will not often, if ever, reach 500 ohms, although in one of the cases operated on by Dr. Keith it amounted to nearly 350. The practical importance of this will be seen, and the relation it bears to the size and quality of the cells one has to get, by a short reference to the battery we are using at present. It consists of twenty-four large Leclanché cells, whose united electromotive force when joined in series is nearly 36 volts, and whose internal resistance is 12 ohms. When an external resistance of 500 ohms is added to this, and the calculation made, we have, according to Ohm's law, which, when C = current, E = electromotive force, R = external resistance, and R' = internal resistance, is expressible thus: $C = \frac{E}{R+R'} = \frac{36}{500+12} = 70$ milliampères. With an external resistance of 350 ohms a current of 100 milliampères can be got; but to reach to even 100 milliampères with 500 ohms of external resistance eleven cells would have to be added to the battery of twenty-four. The M. F. of each cell has been, for convenience, taken at 1·5, instead of 1·48. I am, Sirs, yours faithfully,

Edinburgh, Aug. 3rd, 1887. SKENE KEITH.

PANSLAVISM IN RUSSIAN UNIVERSITIES.

THE alleged Russianising of the Germano-Russian schools, particularly in the Baltic provinces, is, it happily appears, without foundation. Dr. Schultze, sometime clinical lecturer at Heidelberg, who had been invited to fill a corresponding chair in the University of Dorpat by the Russian Government, has since been unconditionally confirmed in the post, without his being required to prelect in the Russian language. Prof. A. Schmidt, also of Heidelberg—"Blut Schmidt," as his colleagues pleasantly distinguish him, in allusion to his most considerable scientific work—and now Rector of Dorpat University, characterises as "pure fable" the report that restrictions, in a Panslavic sense, are imposed on the German occupants of Russian chairs.

Dr. W. Budd (Exeter).—The paper has been received and will appear shortly.

"THE THROAT AND ITS DISEASES."

To the Editors of THE LANCET.

SIRS,—A very serious error having been brought under my notice by a purchaser of the recently published second edition of my book, "The Throat and its Diseases," I shall be obliged if you will allow me to correct it in your columns, for the sake of those who might otherwise overlook the mistake. In formula 80, page 568, a drachm of sulphate of atropia is ordered to an ounce of vaseline as an application to the nostril. It should, of course, be a drachm of the *solution* of that alkaloid. Thanking you in advance for your courtesy, I am, Sirs, yours truly,

Weymouth-st., Portland-place, Aug. 17th. LENNOX BROWNE.

JOSHUA INGHAM IKIN, F.R.C.S.

Died August 8th, 1887.

IN MEMORIAM.

Shall it be said, alas! he died too soon
Whose life's good work completed is on earth;
Have we not that to which himself gave birth
Long years ago?—the consecrated boon
To sick and poor;—the sunshine of that day
When up the garden path he passed along
With Carlisle at his side, and spirit gay,
And heart all mirthful as the free bird's song
He, suffring woman, that holy house did rear
For you and your fond little ones so dear.

August, 1887. CLARENCE FOSTER.

THE NATURE AND TREATMENT OF EPISTAXIS.

THE central idea running through the suggestive paper contributed by Dr. Harkin to the Therapeutical Section of the British Medical Association at its recent meeting in Dublin is lucid enough; but, like many clever theories, it requires more proof than we think the author has adduced in the paper. Again, that important hæmapoietic viscus, the liver, is brought into requisition as the chief cause of various, chiefly chronic, blood states in which epistaxis—and, we may add, other hæmorrhages—are prone to occur. Epistaxis may occur under a variety of conditions, and the blood may be hypinotic or hyperinotic, anæmic or plethoric, or even, it is possible, possessing the right number of red blood-discs; but whatever the condition of the blood, Dr. Harkin believes that much good may result from treatment directed to leading the erring liver back to normal modes of action. The quality of the blood may be improved, and the equilibrium between its solid and fluid constituents may be restored, "by the free administration of chlorate of potassium alone, or combined with a soluble salt of iron." The health of the liver may be improved by counter-irritation over the region of the liver, a large blister being in practice the most convenient and suitable application. Dr. Harkin strongly deprecates active surgical interference with the diseased liver or its portal tributaries.

Cymro.—For registration on the ground of having been in practice before the passing of the Dentists' Act it is necessary that information of the claimant's name and address, &c., should have been transmitted to the Registrar before Aug. 1st, 1879.

A. B. C.—We do not give medical advice.

SWEATING OF THE FEET.

To the Editors of THE LANCET.

SIRS,—Many persons during the hot weather are subject to very great discomfort in consequence of an offensive odour proceeding from the feet. For this cause a servant has been discharged from her situation, a gentleman has been debarred from frequenting society, and hitherto no antidote has been found for the evil. In a case, however, which has come under my notice I have found a remedy in the use of soda; so much so that by an effectual daily application of it the nuisance has been entirely removed, whereas by one day's omission the nuisance has recurred. I have not tried ammonia, the stronger alkali, but feel confident that if the soda be applied either in fine powder or concentrated solution, as the skin will bear it, the remedy will be effectual, and be found a great boon to persons so afflicted.

I am, Sirs, yours very truly,

Newhaven, Aug. 5th, 1887. D. RICHARDSON, M.R.C.S., L.S.A.

CAUCASIAN WATERING PLACES.

THE Caucasian watering places or mineral baths seem to be well patronised this season, no less than 4633 persons having taken tickets up to July 2nd, in addition to a certain number of officers and civil servants who are sent there at the public expense, as well as seventy-four persons whose expenses are defrayed by different charitable institutions. There are this year sixty medical men in practice at the different "baths."

D. D. Jones, M.B.—We think any of the leading firms of instrument makers will undertake the work.

HOME FOR IMBECILES OF LIMITED MEANS.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if any of your readers can tell me of any Home that would receive a man of weak intellect, brother of a working farmer, about forty years of age. He is a good and capable worker, and his friends simply seek to place him under restraint in consequence of his constantly straying from home, often being heard of at long distances in a most abject condition. The friends could pay about ten shillings a week towards his support. Any information on the subject would be thankfully received.—Yours truly,

Aug. 14th, 1887. B. FARADAY GILES, M.D.

SANDALWOOD IN BLENNORRHAGIA.

M. C.—The oil of sandalwood in the treatment of gonorrhœa (blennorrhagia), both in its acute stage and in some of its sequelæ, has been found efficacious by Posner, Letzel, and Casper, and more recently by Rosenberg, of the Jewish Hospital in Berlin. In chronic blennorrhagia, this last named investigator has not been equally successful. Cystitis and prostatitis were among the sequelæ in which he found its use beneficial.

A CASE-BOOK.

R. F. W.—There is room for a few good forms of case-book. One such is before us for practitioners and students which would meet the views of our correspondent—Lewis's Pocket Case-book, designed by A. T. Brand, M.D., to be had of H. K. Lewis, Gower-street. It is neatly arranged, portable, and on good paper.

C. D.—The paper will appear in an early number.

A Volunteer Surgeon.—No.

COMMUNICATIONS not noticed in our present number will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Lauder Brunton, Redcar; Dr. Bell Taylor, Nottingham; Drs. Meredith and Dunne, Dublin; Dr. S. West; Dr. Thudichum, London; Mr. Lennox Browne, London; Dr. R. Paramore, London; Mr. R. Williams, Manchester; Prof. Whalley, Edinburgh; Mr. A. Warner, London; Mr. W. Allison, London; Mr. Fitzpatrick, Moville; Mr. Dagleish, Trowbridge; Mr. G. Newbolt, Liverpool; Mr. St. George, Antrim; Messrs. Potter and Pearce, London; Dr. J. L. Spender, Rathdrum; Messrs. Eason and Son, Dublin; Mr. R. F. Benham, London; Messrs. Henderson and Clark, Edinburgh; Dr. Bowes, Bedford; Dr. S. O. L. Potter, San Francisco; Mr. F. R. Humphreys, London; Messrs. Thompson and Co., London; Dr. B. F. Giles; Mr. Martin, Box; Messrs. Maythorn and Son, Biggleswade; Mr. A. S. Jones, Wrexham; Messrs. Warren and Co., Bristol; Mr. Wale, Maidstone; Mrs. Maitland; Mr. McCook Weir, Nottingham; Mr. M. Laurie, Weymouth; Messrs. Southall and Co., Birmingham; Mr. A. P. Hills, Bexhill; Mr. Pike; Messrs. Dain and Co., Birmingham; Mr. Greenham, Shanklin; Dr. Dale, King's Lynn; Mr. Wright, Sidmouth; Mr. Wilcocks, London; Mr. Tennant, Ben Rhydding; Dr. Spencer, Bath; Mr. A. Carter, London; Mr. Scott, Manchester; Mr. Campbell, Jarrow-on-Tyne; Messrs. Robertson and Scott, Edinburgh; Mr. Boyeau, Paris; Mr. Jacob; Messrs. Blackie and Son, Edinburgh; Dr. Gardiner, Sheffield; Dr. Campbell, London; Mr. Blyth, St. Leonards; Mr. Gordon, Dumfries; Mr. Birchall, Liverpool; Mr. Mercier, London; Mr. Beale, Brighton; Mr. T. H. Brattan; Dr. Thomas, Glasgow; Dr. W. J. Collins, London; Mr. T. Osborne Walker, Crick; Mr. F. H. Pott, Hull; Mr. Allen; Messrs. Blake and Co., Leeds; Mr. Lawrence, Norton; Mr. Rayward, London; Mr. M. Smale, London; Mr. J. J. B. Taylor, Ulverston; Mr. Marshall, Hawkhurst; Mr. Whysall, Grantham; Mr. Macgee, Yorks; Dr. Heelas, Ventnor; Mr. Thompson; Mr. Pearcey, Taunton; Mr. Torrance, Norwich; Mr. F. W. B. Green, London; J. S., Bradford; A Volunteer Surgeon; D. F. J.; Enquirer; The Military Secretary of the India Office; Nuntius.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. May, Hanwell; Dr. Lawrence, Chepstow; Mr. Casey, Oldham; Mr. Cock, Liverpool; Mr. Branthwaite, Twickenham; Messrs. Burgoyne and Co., London; Mr. Hynes, Ennis; Mr. Gibson, Orton; Messrs. Smith and Son, Manchester; Mr. Seymour, Coventry; Messrs. Lumley and Co., London; Mr. Donaldson, Edinburgh; Mr. Palm; Messrs. Grace and Co., Bristol; Mr. Townson, Chester; Dr. Stackpool; Mr. Sabenar, Wigan; Mr. Holsgrave, Waterloo; Mr. Davis, Gateshead; Dr. Taylor, Grantham; Mr. Cuckson, Gainsborough; Mr. Woodcock, Bradford; Mr. Hosker, Bournemouth; Mr. Jeffreys, Chesterfield; Mr. Restall, Stroud; Mr. Angel, Southampton; Dr. Wardle, Bolton; Dr. Smyth, Shipley; Dr. Sharp, Walsall; Mr. Redhead, Hull; Mrs. Cunningham, Surbiton; Dr. Watt; Dr. Meadows, Leicester; Mr. Smith, Tunbridge Wells; Mr. Hartnell, Nottingham; Mr. Immisch; Messrs. Taylor and Co., London; Mr. Abernethey, Brixton; Messrs. Ledger, Smith and Co., London; Dr. Waterhouse, Dunwoon; Messrs. Mawer and Co., Bristol; Mr. Potter, Dartmouth; Medicus, Bedale; Opifer; G. B., Derby; C. B., W. D., Leicester; M.B., Heckmondwyke; Lady Manager, St. Leonards; H., Huddersfield; B. A. L., Oxford; B. A., London; Leon; Cycho; N. M., London; C. M.; P. Y. K.; Matron, Lowestoft; A. B. C., Harwich; M. J.; Medicus, Liverpool; Alpha, Kidderminster; G. H., Llanelly; Locum; H. F., Barnstaple; W. A., Clapham; M.B., C.M.; A. B., London; F. L. N.; M.A., Cambridge.

Windsor and Eton Express, Bolton Chronicle, Southern Times, Devon and Exeter Daily Gazette, Buenos Ayres Weekly Herald, Montreal Daily Star, &c., have been received.

Medical Diary for the ensuing Week.

Monday, August 22.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10.30 A.M., and each day at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M; Thursday, 2.30.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITALS.—Operations, 2 P.M., and each day in the week at the same hour.

Tuesday, August 23.

GUY'S HOSPITAL.—Operations, 1.30 P.M. and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2.30 P.M.; Saturday, 2.30 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M.

Wednesday, August 24.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M.; Thursday & Saturday, same hour.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Saturday, 2 P.M. Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
KING'S COLLEGE HOSPITAL.—Operations, 3 to 4 P.M.; Friday, 2 P.M.; Saturday, 1 P.M.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9 A.M.; Saturday, same hour.

Thursday, August 25.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
NORTH-WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ROYAL COLLEGE OF PHYSICIANS OF LONDON.—4 P.M. Dr. Samuel West: On Pneumothorax (Bradshawe Lecture).

Friday, August 26.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, August 27.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.

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An original and novel feature of "THE LANCET General Advertiser" is a special Index to Advertisements on page 2, which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

Terms for Serial Insertions may be obtained of the Publisher, to whom all letters relating to Advertisements or Subscriptions should be addressed.

Advertisements are now received at all Messrs. W. H. Smith and Son's Railway Bookstalls throughout the United Kingdom and all other Advertising Agents.

Agent for the Advertising Department in France—J. ASTIER, 66, Rue Caumartin, Paris.